MITSUBISHI ELECTRIC

FLOOR AND CEILING TYPE AIR CONDITIONERS

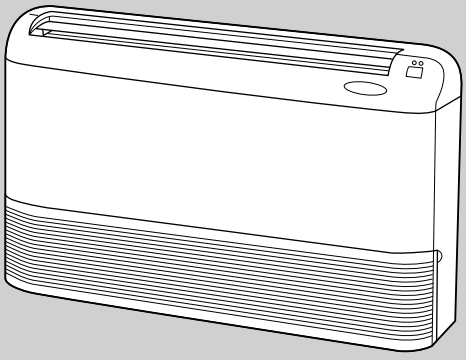
No. OB270

SERVICE MANUAL

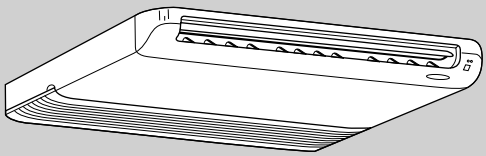
Wireless type
Models

MCF-13NV-E4(WH) ▪ **MUCF-13NV-E4**
MCF-18NV-E3(WH) ▪ **MUCF-18NV-E3**
MCF-24NV-E3(WH) ▪ **MUCF-24NV-E3**

(When installed on the floor)



(When installed on the ceiling)



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※ As for parts lists, all sub number's series are included.

1 TECHNICAL CHANGES

MCF-13NV-E3 · MUCF-13NV-E3 → MCF-13NV-E4 · MUCF-13NV-E4

1. Remote controller has changed.
   SWING button is removed, but SWING MODE function is available by VANE CONTROL button.

MCF-18NV-E2 · MUCF-18NV-E2 → MCF-18NV-E3 · MUCF-18NV-E3

1. Remote controller has changed.
   SWING button is removed, but SWING MODE function is available by VANE CONTROL button.

MCF-24NV-E2 · MUCF-24NV-E2 → MCF-24NV-E3 · MUCF-24NV-E3

1. Remote controller has changed.
   SWING button is removed, but SWING MODE function is available by VANE CONTROL button.

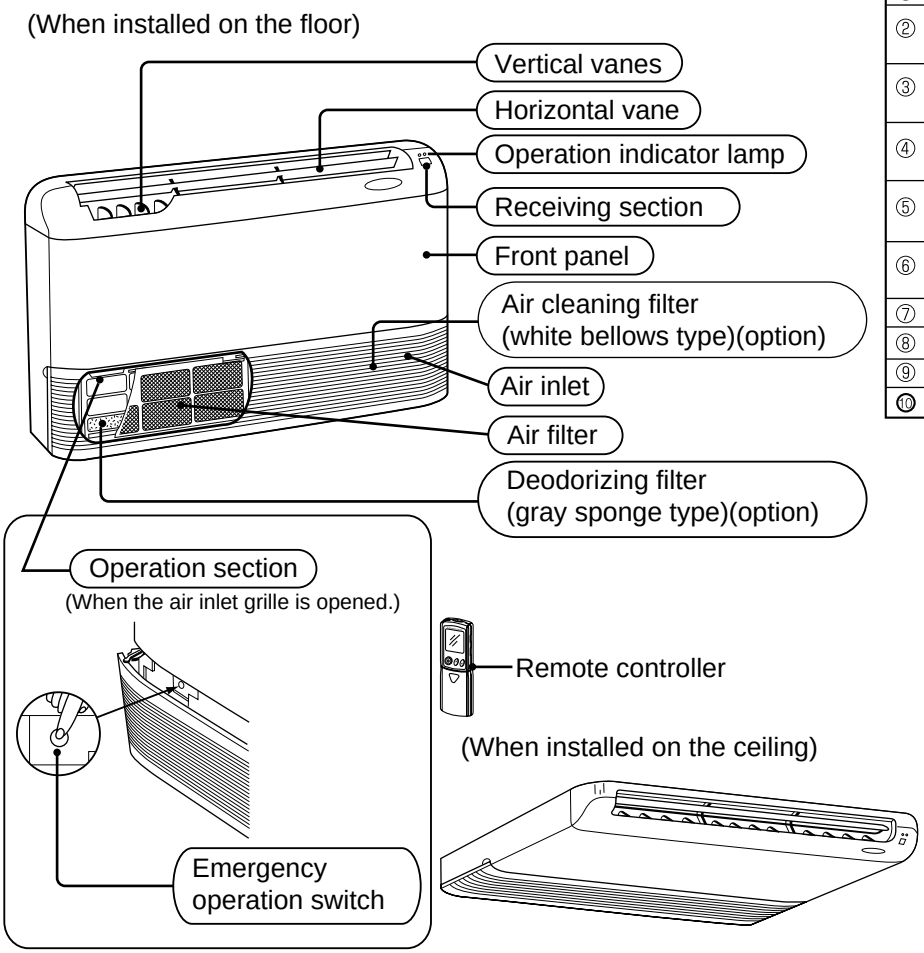
2 PART NAMES AND FUNCTIONS

MCF-13NV -E4 MCF-18NV -E3 MCF-24NV -E3

INDOOR UNIT

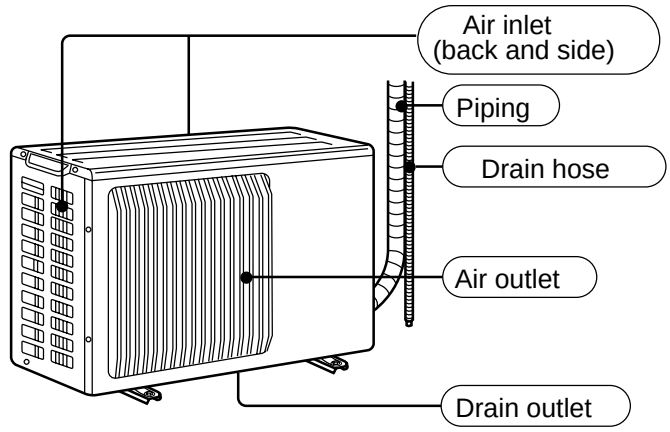
ACCESSORIES

	Item	Q'ty
①	Installation plate	2
②	Unit fixing screw 5 × 12mm	2
③	Wireless remote controller	1
④	Remote controller mounting hardware	1
⑤	Fixing screw for ④ 3.5 × 16mm (Black)	2
⑥	Battery (AAA) for remote controller	2
⑦	Drain hose	1
⑧	Drain pipe cover	1
⑨	Knockout cover	1
⑩	Screw for ⑨ 4 × 10mm	2



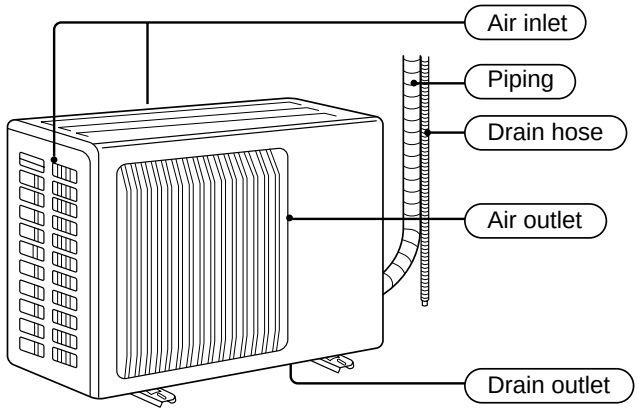
MUCF-13NV - E4

OUTDOOR UNIT



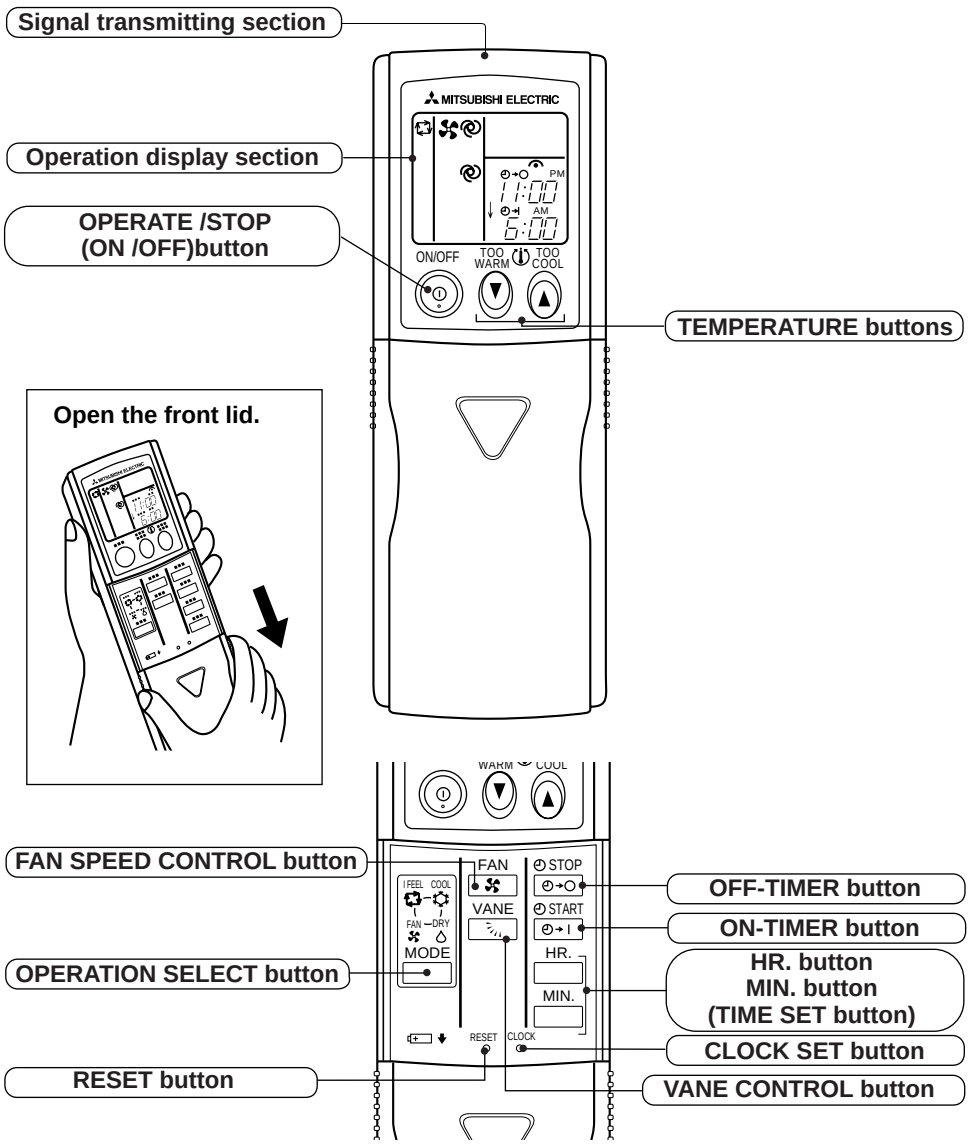
MUCF-18NV - E3 **MUCF-24NV -** E3

OUTDOOR UNIT



MCF-13NV - E4 **MCF-18NV -** E3 **MCF-24NV -** E3

REMOTE CONTROLLER



3 SPECIFICATION

Indoor model			**MCF-13NV -** E4	**MCF-18NV -** E3	**MCF-24NV -** E3
Function			Cooling	Cooling	Cooling
Power supply			Single phase 220-240V, 50Hz	Single phase 240V, 50Hz	Single phase 240V, 50Hz
Capacity	Capacity	kW	3.7	5.0	6.4
	Dehumidification	ℓ /h	1.6	2.4	3.4
	Air flow(High)	m³ /h	678	780	840
Electrical data	Power outlet	A	10	15	25
	Running current	A	6.3-6.3	8.9-8.8	13.3-12.9
	Power input	W	1,310-1,380	1,920-2,010	2,870-2,970
	Auxiliary heater	A(kW)	—	—	—
	Power factor	%	95-91	98-95	98-96
	Starting current	A	35-38	51-55	59-59
	Fan motor current	A	0.56-0.58	0.69-0.69	0.91-0.91
Coefficient of performance(C.O.P)			2.82-2.68	2.60-2.49	2.23-2.15
Fan motor	Model		RB4V19-AB	RB4V25-AB	RB4V36-AB
	Winding resistance(at20℃)	Ω	WHT-BLK 203.2 BLK-YLW 45.9 YLW-BLU 32.7 BLU-BRN 44.4 BRN-RED 23.3	WHT-BLK 182.2 BLK-YLW 68.9 YLW-BLU 47.5 BLU-BRN 31.5 BRN-RED 22.9	WHT-BLK 82.9 BLK-YLW 65.6 YLW-BLU 36.0 BLU-BRN 27.0 BRN-RED 13.7
	Dimensions W×H×D	mm	1,100×650×180		
	Weight	kg	26		
Special remarks	Air direction		5		
	Sound level (High)	dB	43-44	46-47	48-48
	Fan speed (High)	rpm	1,080-1,130	1,220-1,260	1,310-1,330
	Fan speed regulator		3		
	Thermistor RT11(at25℃)	kΩ	10		
	Thermistor RT12(at25℃)	kΩ	10		
Outdoor model			**MUCF-13NV -** E4	**MUCF-18NV -** E3	**MUCF-24NV -** E3
Capacity	Air flow (High)	m³ /h	1,848-1,980	2,190-2,286	2,286-2,358
Electrical data	Compressor motor current	A	5.74-5.72	8.21-8.11	12.39-11.99
	Fan motor current	A	0.30	0.39	0.55
Compressor	Model		RH-231VHAT	NH-33VMDT	NH-47VMDT
	Output	W	1,100	1,500	2,200
	Winding resistance(at20℃)	Ω	C-R 2.11 C-S 3.97	C-R 1.20 C-S 2.70	C-R 0.96 C-S 2.07
Fan motor	Model		RA6V33-CB	RA6V50-OG	RA6V60-AC
	Winding resistance(at20℃)	Ω	WHT-BLK 176 BLK-RED 413	WHT-BLK 116 BLK-RED 111	WHT-BLK 81 BLK-YLW 92 BLK-RED 102
	Dimensions W×H×D	mm	780×540×255	850×605×290	
	Weight	kg	34	55	61
Special remarks	Sound level (High)	dB	49	52	53
	Fan speed (High)	rpm	700-750	810-845	860-886
	Fan speed regulator		1	1	2
	Refrigerant filling capacity(R22)	kg	0.85	1.50	2.15
	Refrigerating oil (Model)	cc	520 (MS56)	1,200 (MS32N1)	1200 (MS32N1)

NOTE:Test conditions are based on ISO 5151
Cooling : Indoor DB27°C WB19°C
Outdoor DB35°C WB(24°C)

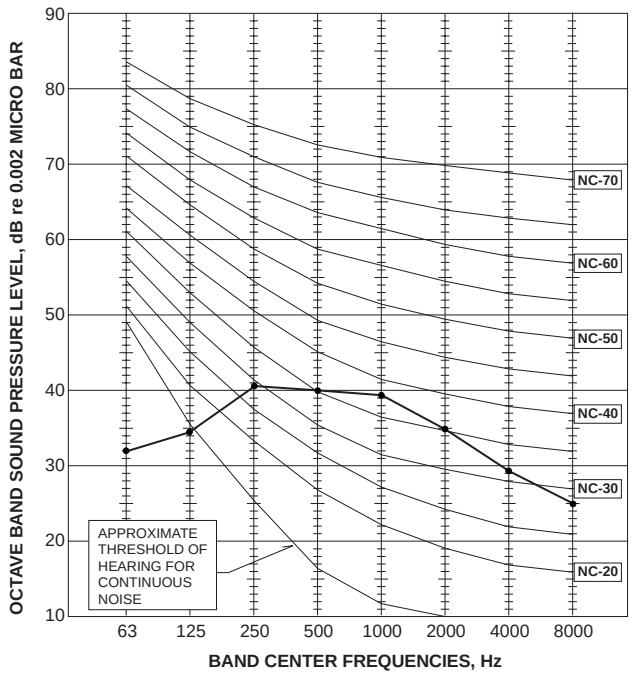
4 NOISE CRITERIA CURVES

NOISE CRITERIA CURVES

MCF-13NV - E4

SPEED	SPL(dB(A))	LINE
High	43-44	●—●

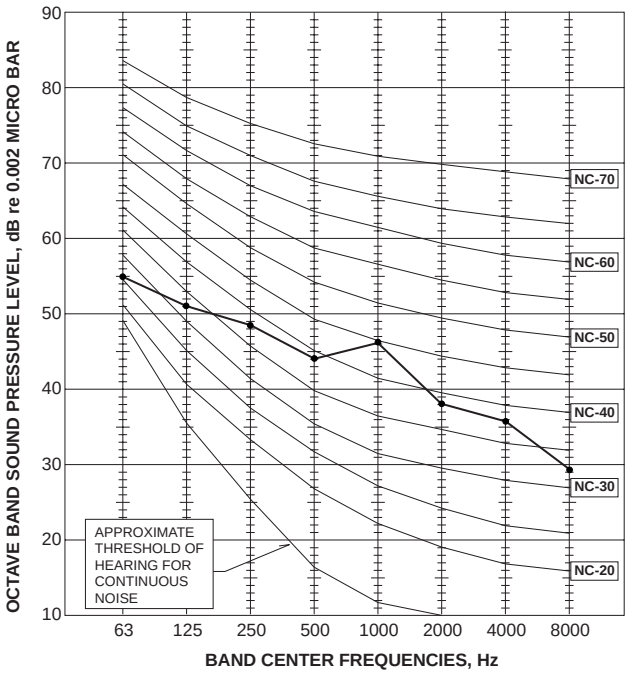
Test conditions,
Cooling : DB 27℃ WB 19℃



MUCF-13NV - E4

SPEED	SPL(dB(A))	LINE
High	48	●—●

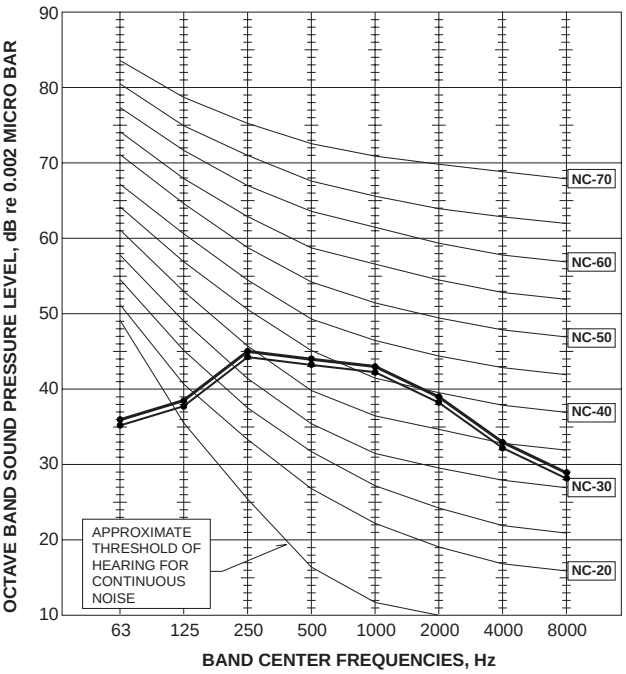
Test conditions,
Cooling : DB 35℃ WB (24℃)



MCF-18NV - E3

SPEED	SPL(dB(A))	LINE
High (240V)	47	●—●
High (220V)	46	●—●

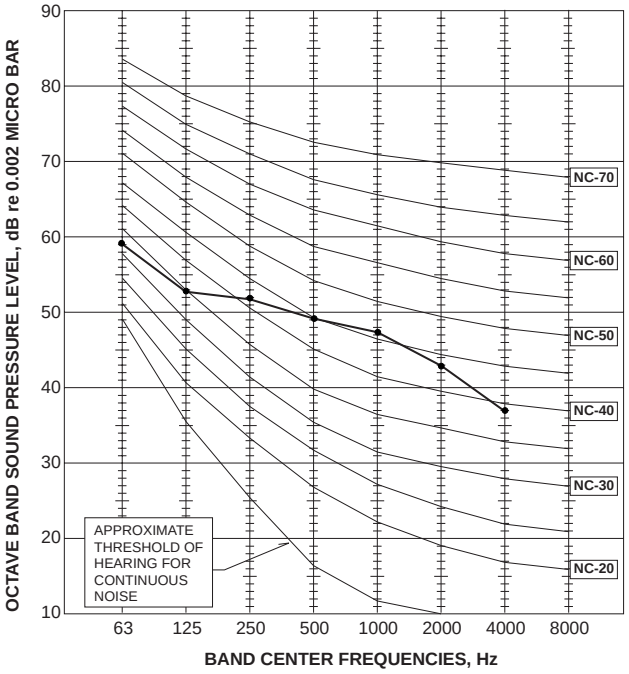
Test conditions,
Cooling : DB 27℃ WB 19℃



MUCF-18NV - E3

SPEED	SPL(dB(A))	LINE
High	52	●—●

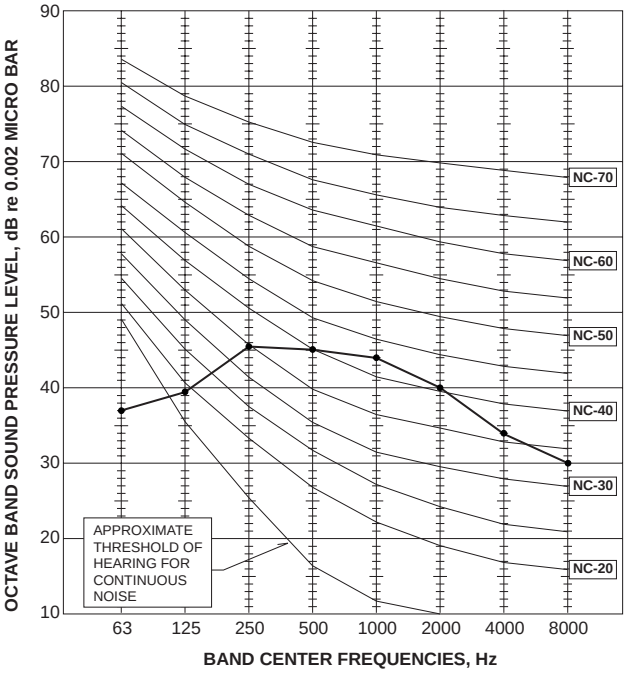
Test conditions,
Cooling : DB 35℃ WB (24℃



MCF-24NV - E3

SPEED	SPL(dB(A))	LINE
High	48	

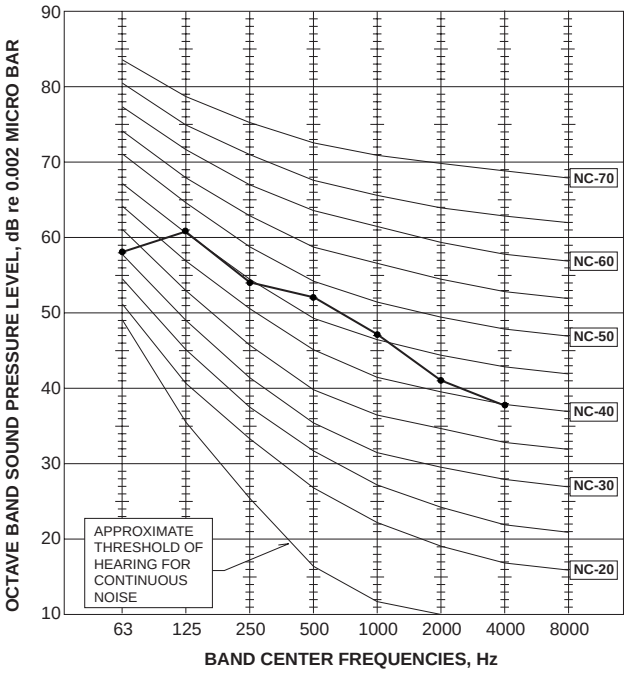
Test conditions,
Cooling : DB 27℃ WB 19℃



MUCF-24NV - E3

SPEED	SPL(dB(A))	LINE
High	53	

Test conditions,
Cooling : DB 35℃ WB (24℃)

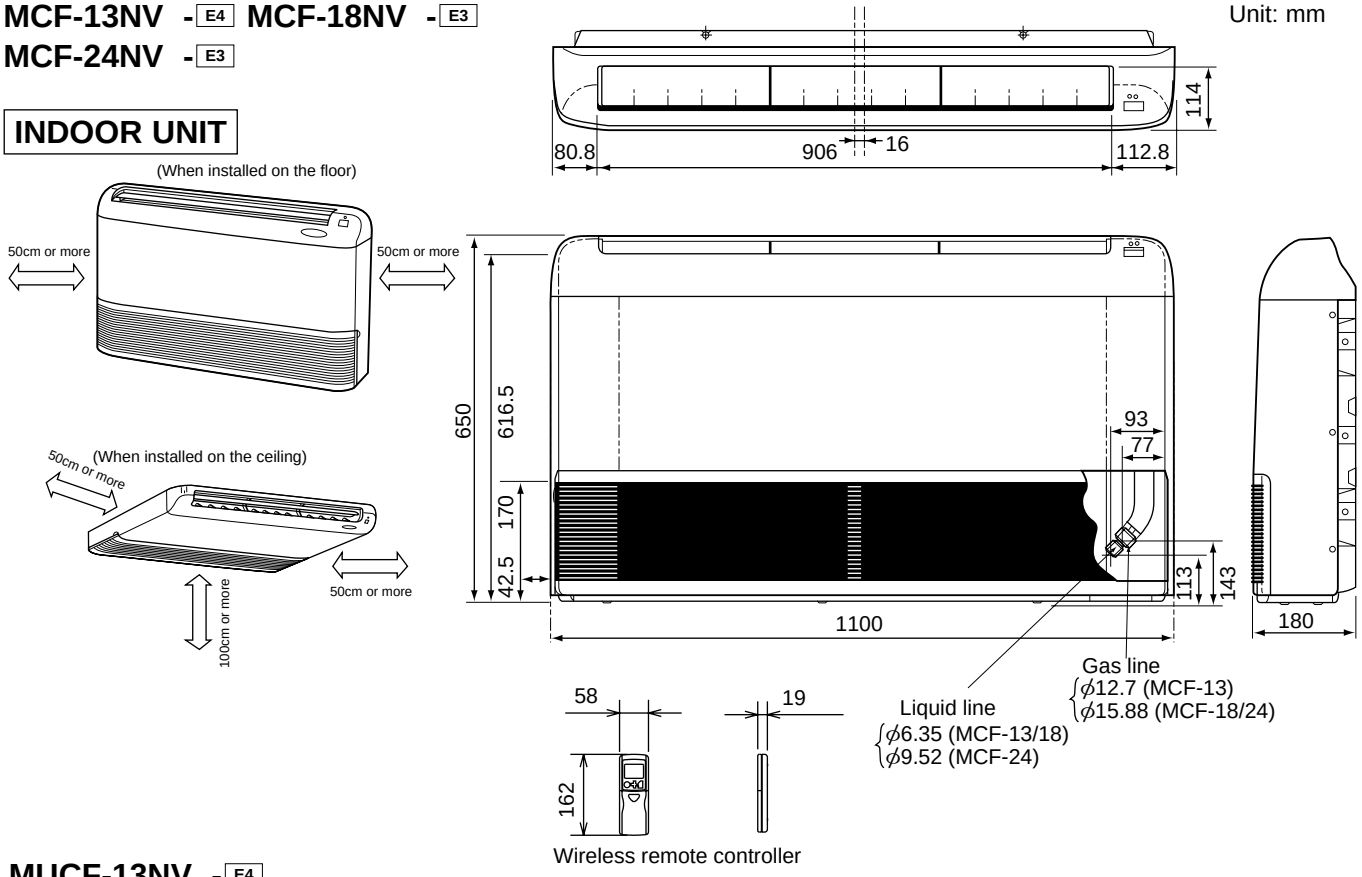


5 OUTLINES AND DIMENSIONS

MCF-13NV - E4 **MCF-18NV -** E3
MCF-24NV - E3

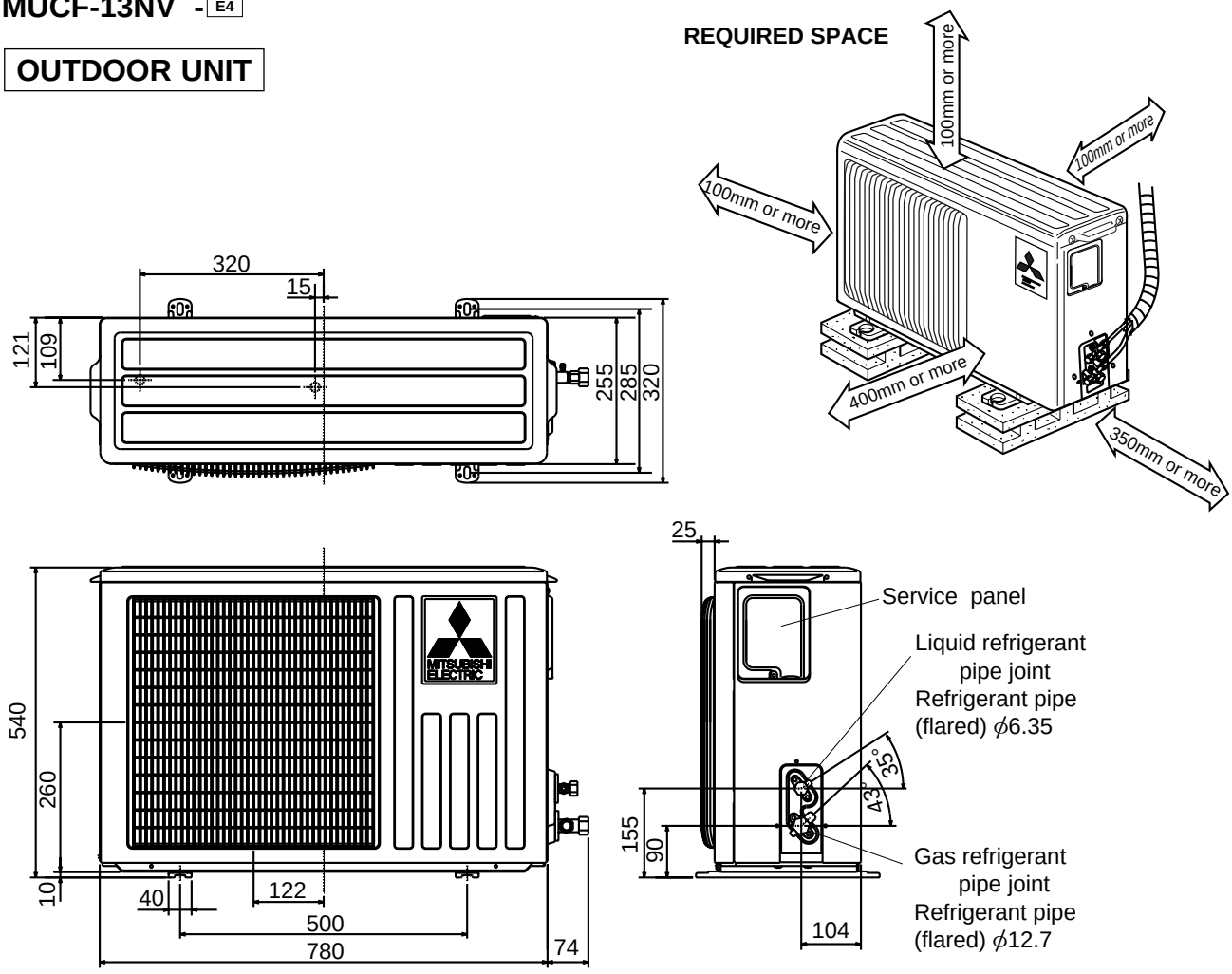
Unit: mm

INDOOR UNIT



MUCF-13NV - E4

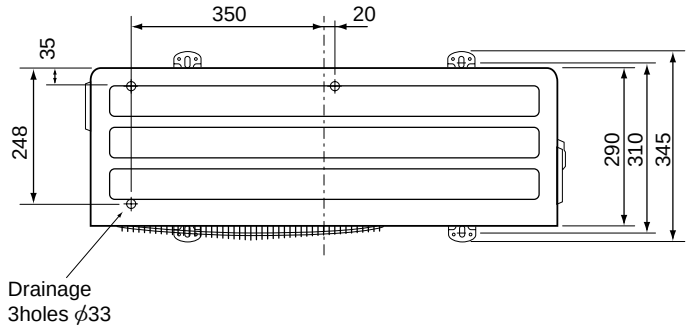
OUTDOOR UNIT

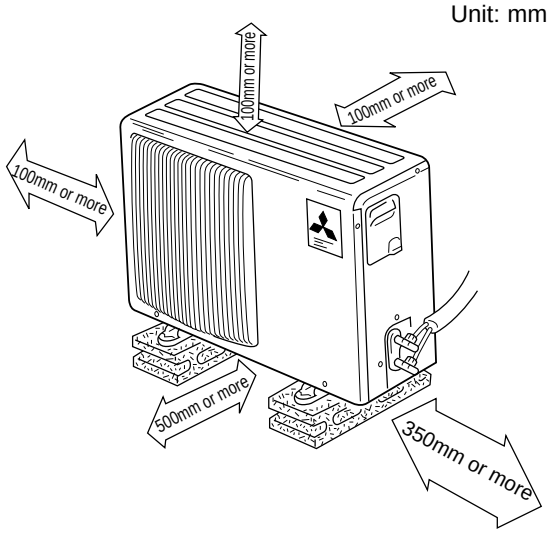


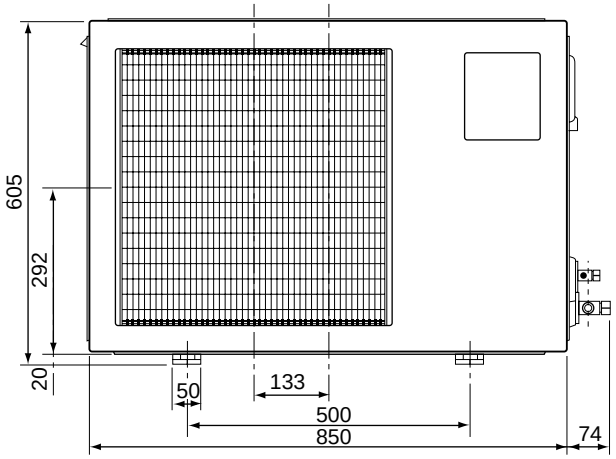
MUCF-18NV -E3 MUCF-24NV -E3

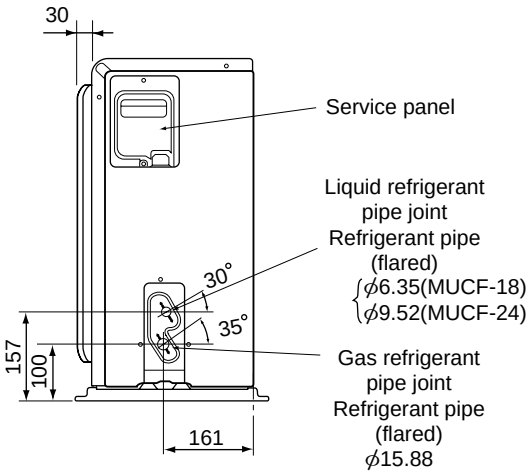
Unit: mm

OUTDOOR UNIT



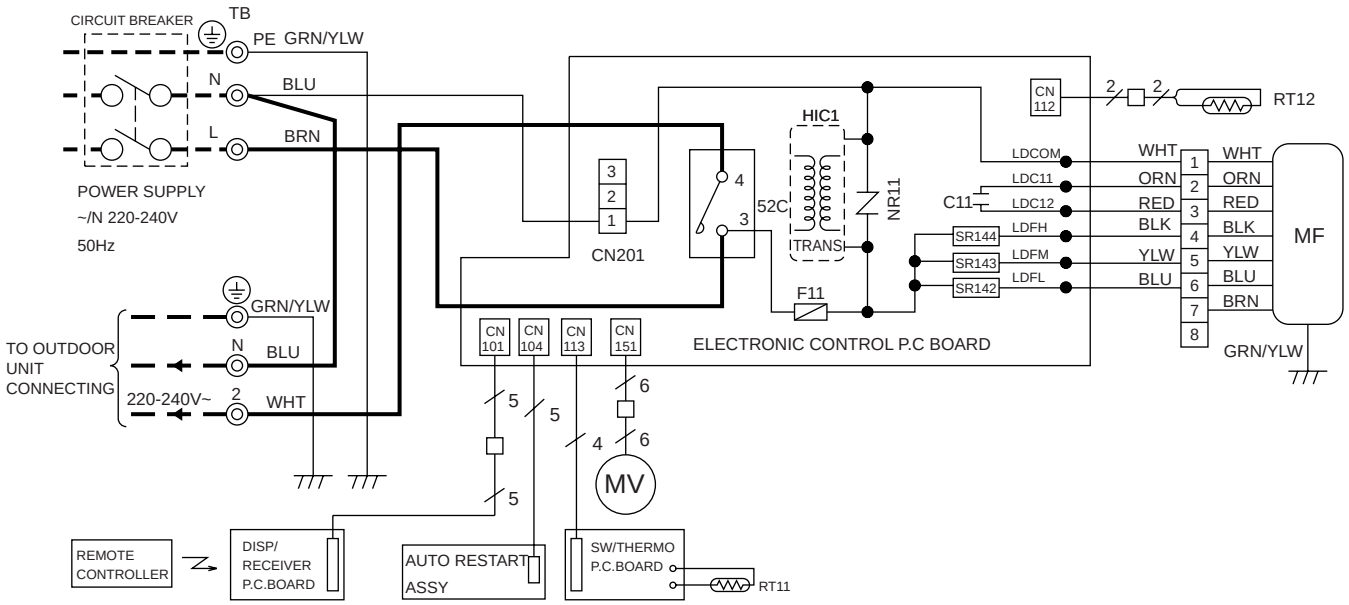






6 WIRING DIAGRAM

INDOOR UNIT MODEL MCF-13NV- E4

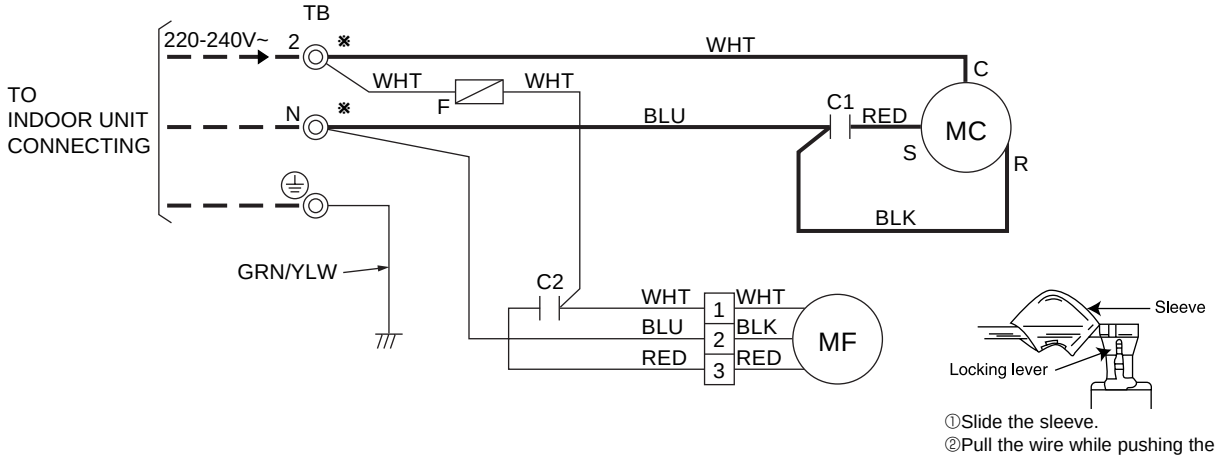


SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
C11	INDOOR FAN MOTOR CAPACITOR	MV	VANE MOTOR	SR142~SR144	SOLID STATE RELAY
F11	FUSE (3.15A)	NR11	VARISTOR	TB	TERMINAL BLOCK
HIC1	DC/DC CONVERTER	RT11	ROOM TEMPERATURE THERMISTOR	52C	COMPRESSOR CONTACTOR
MF	FAN MOTOR(INNER PROTECTOR)	RT12	INDOOR COIL THERMISTOR		

NOTE:1. About the outdoor side electric wiring, refer to the outdoor unit electric wiring diagram for servicing.
2. Use copper conductors only.(For field wiring)
3. Symbols below indicate;
◎: Terminal block,□□□□: Connector

VG79B036H01

OUTDOOR UNIT MODEL MUCF-13NV- E3



①Slide the sleeve.
②Pull the wire while pushing the locking lever.

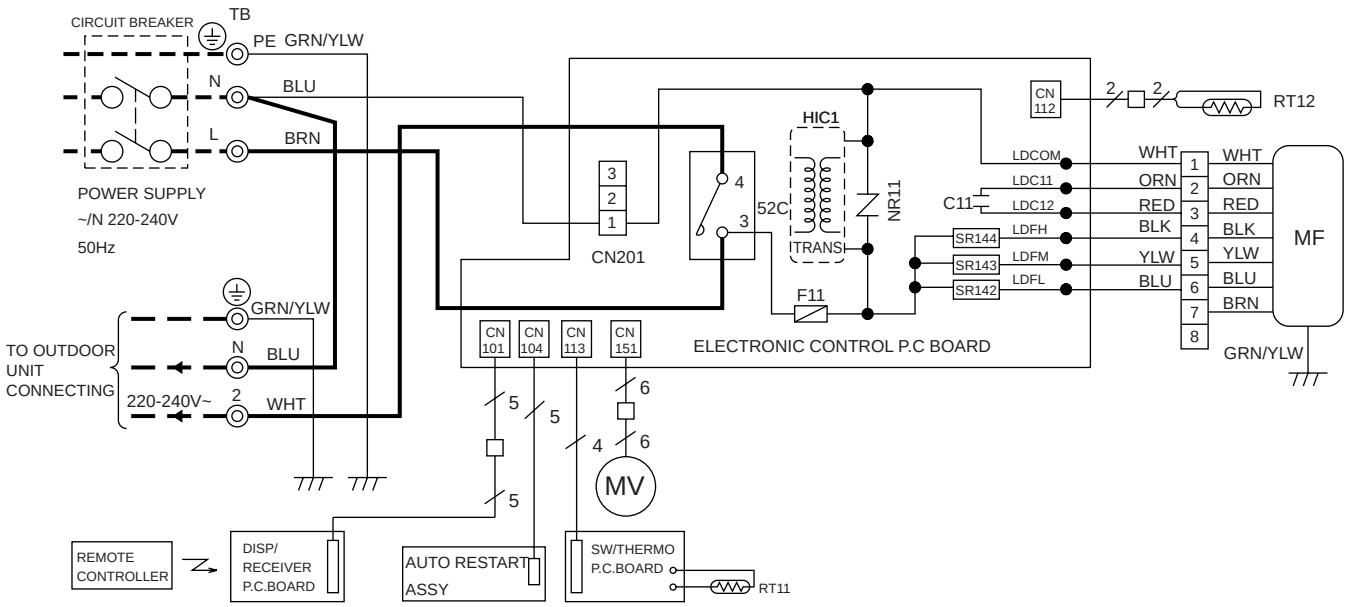
SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
C1	COMPRESSOR CAPACITOR	F	FUSE 2A	MF	OUTDOOR FAN MOTOR (INNER PROTECTOR)
C2	OUTDOOR FAN MOTOR CAPACITOR	MC	COMPRESSOR (INNER PROTECTOR)	TB	TERMINAL BLOCK

NOTE:1. Use copper conductors only (For field wiring).
2. "※" shows the terminals with a lock mechanism, so they cannnot be removed when you pull the lead wire.
Be sure yo pull the lead wire by pushing the locking lever (projected part) of the terminal with a finger.

SG79B458H01

INDOOR UNIT

MODEL MCF-18NV- E3

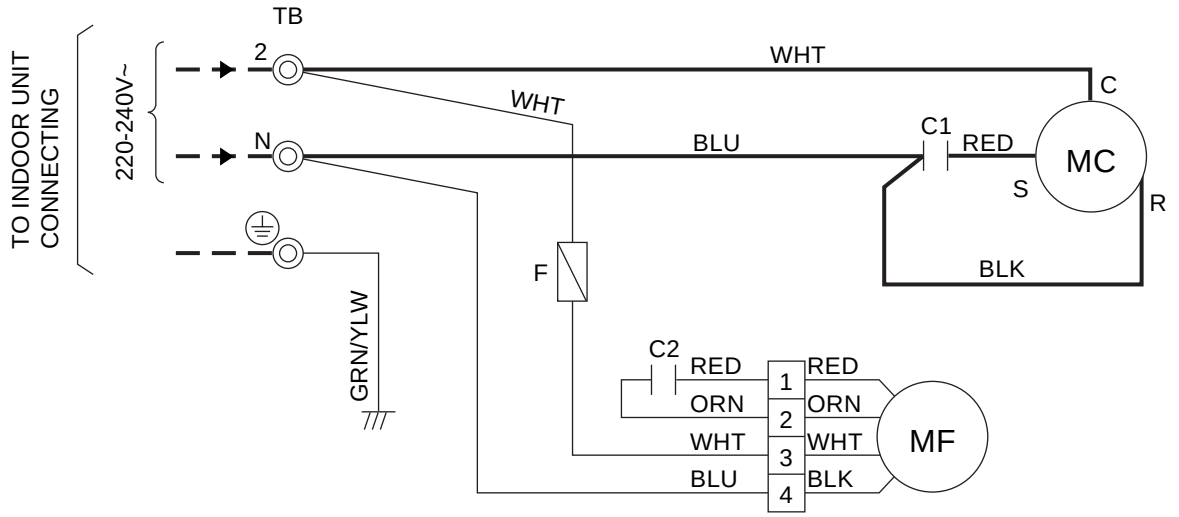


SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
C11	INDOOR FAN MOTOR CAPACITOR	MV	VANE MOTOR	SR142~SR144	SOLID STATE RELAY
F11	FUSE (3.15A)	NR11	VARISTOR	TB	TERMINAL BLOCK
HIC1	DC/DC CONVERTER	RT11	ROOM TEMPERATURE THERMISTOR	52C	COMPRESSOR CONTACTOR
MF	FAN MOTOR (INNER PROTECTOR)	RT12	INDOOR COIL THERMISTOR		

NOTE:1. About the outdoor side electric wiring, refer to the outdoor unit electric wiring diagram for servicing. VG79B032H01
2. Use copper conductors only.(For field wiring)
3. Symbols below indicate;
◎: Terminal block,□□□□: Connector

OUTDOOR UNIT

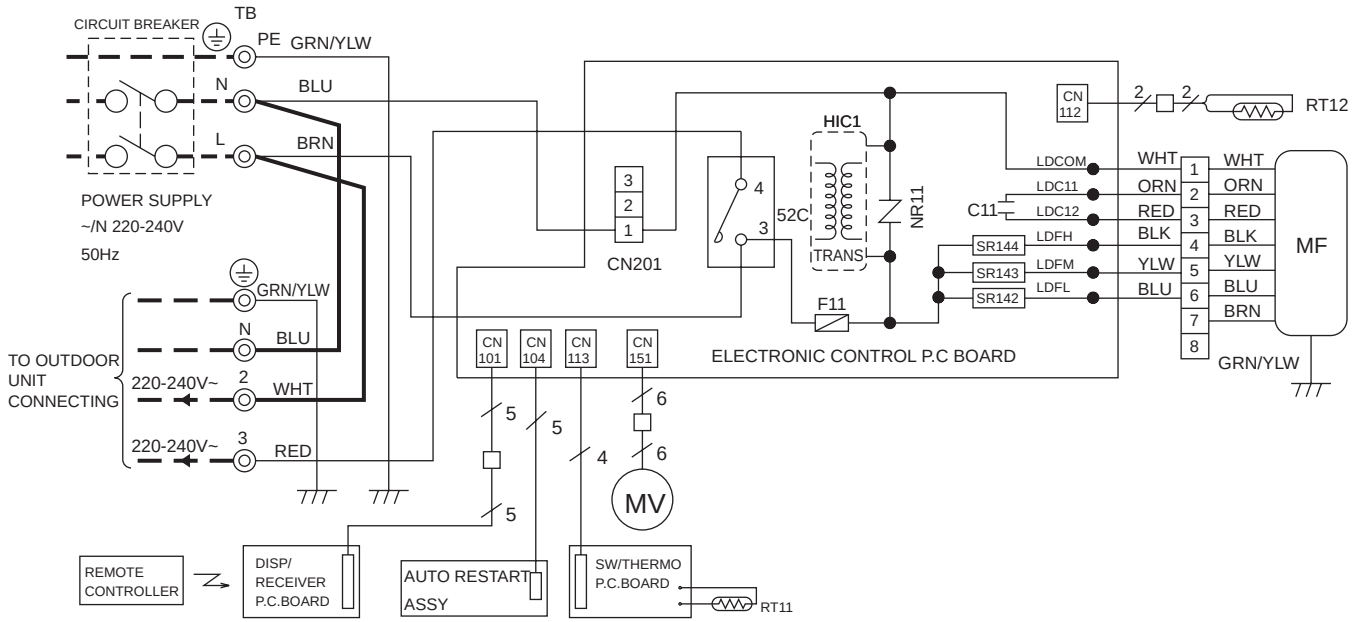
MODEL MUCF-18NV- E3



SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
C1	COMPRESSOR CAPACITOR	F	FUSE 2A	MF	OUTDOOR FAN MOTOR (INNER PROTECTOR)
C2	OUTDOOR FAN MOTOR CAPACITOR	MC	COMPRESSOR (INNER PROTECTOR)	TB	TERMINAL BLOCK

NOTE:1. About the outdoor side electric wiring, refer to the outdoor unit electric wiring diagram for servicing. SG79J002H01
2. Use copper conductors only.(For field wiring)
3. Symbols below indicate;
◎: Terminal block,□□□□: Connector

INDOOR UNIT MODEL MCF-24NV- E3

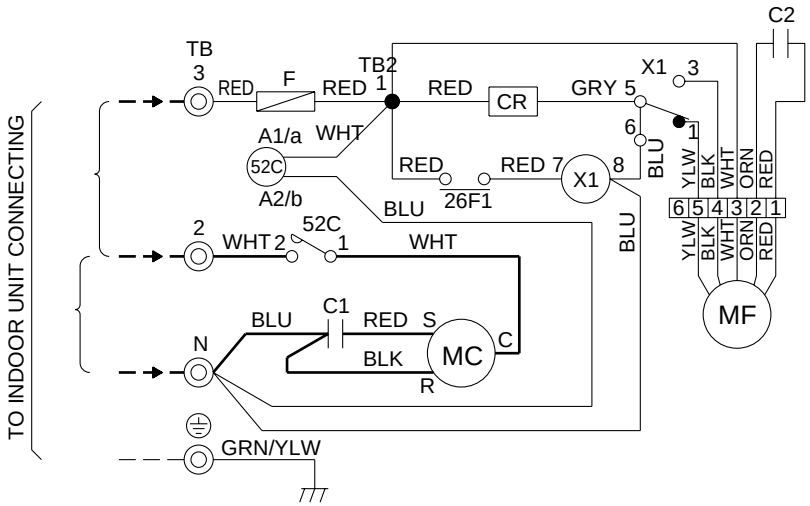


SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
C11	INDOOR FAN MOTOR CAPACITOR	MV	VANE MOTOR	SR142~SR144	SOLID STATE RELAY
F11	FUSE (3.15A)	NR11	VARISTOR	TB	TERMINAL BLOCK
HIC1	DC/DC CONVERTER	RT11	ROOM TEMPERATURE THERMISTOR	52C	CONTACTOR
MF	FAN MOTOR (INNER PROTECTOR)	RT12	INDOOR COIL THERMISTOR		

NOTE:1. About the outdoor side electric wiring, refer to the outdoor unit electric wiring diagram for servicing.
2. Use copper conductors only.(For field wiring)
3. Symbols below indicate;
◎: Terminal block,□□□□: Connector

VG79B033H01

OUTDOOR UNIT MODEL MUCF-24NV- E3



SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
C1	COMPRESSOR CAPACITOR	MC	COMPRESSOR (INNER PROTECTOR)	X1	FAN MOTOR RELAY
C2	OUTDOOR FAN MOTOR CAPACITOR	MF	OUTDOOR FAN MOTOR (INNER PROTECTOR)	26F1	THERMOSTAT (AIRFLOW CONTROL)
CR	SURGE ABSORBER	TB	TERMINAL BLOCK	52C	COMPRESSOR CONTACTOR
F	FUSE 2A	TB2	TERMINAL BLOCK		

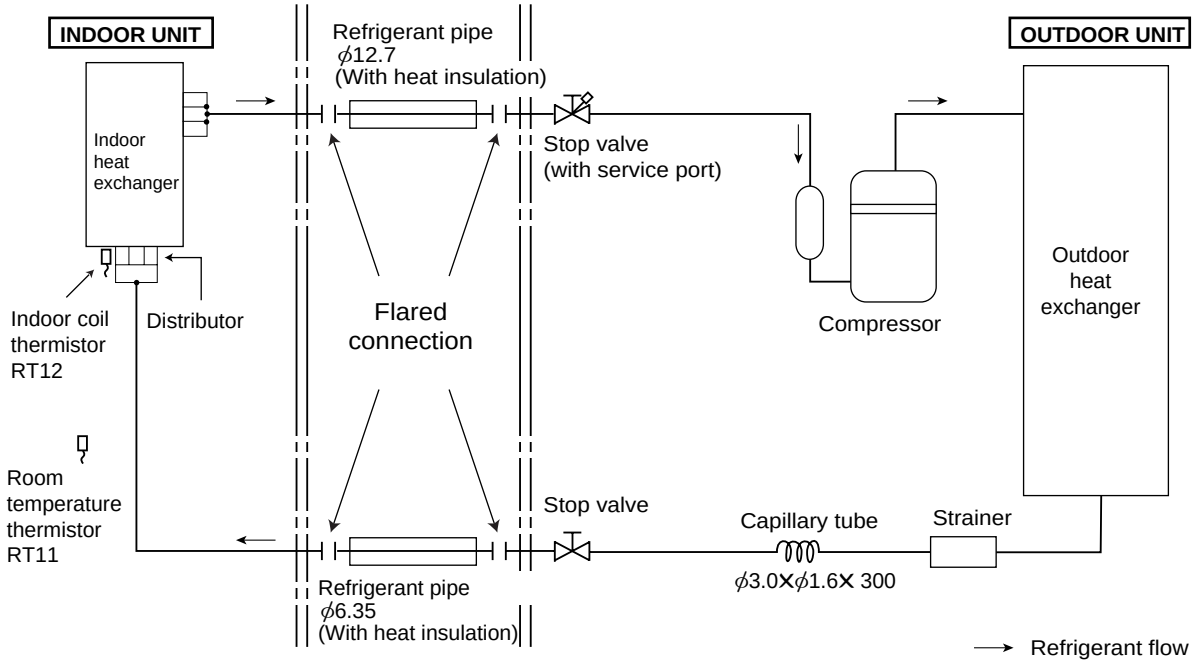
SG79J078H01

NOTE:1. About the outdoor side electric wiring, refer to the outdoor unit electric wiring diagram for servicing.
2. Use copper conductors only.(For field wiring)
3. Symbols below indicate;
◎: Terminal block,□□□□: Connector

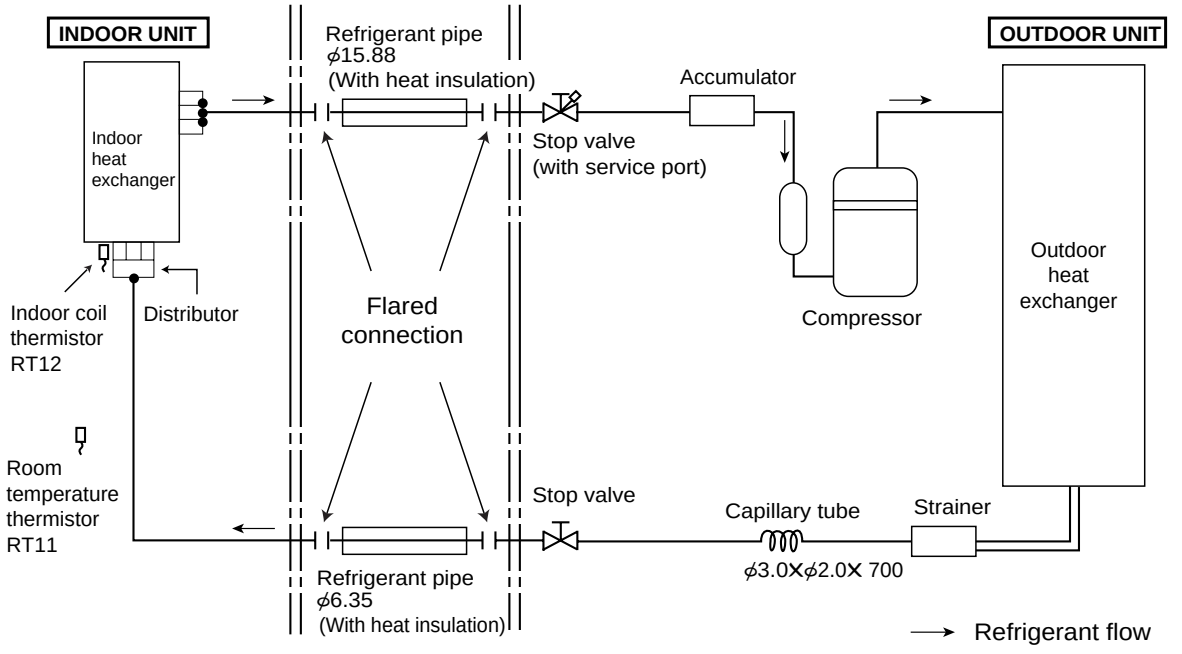
7 REFRIGERANT SYSTEM DIAGRAM

Unit:mm

MCF-13NV - E4 MUCF-13NV - E4

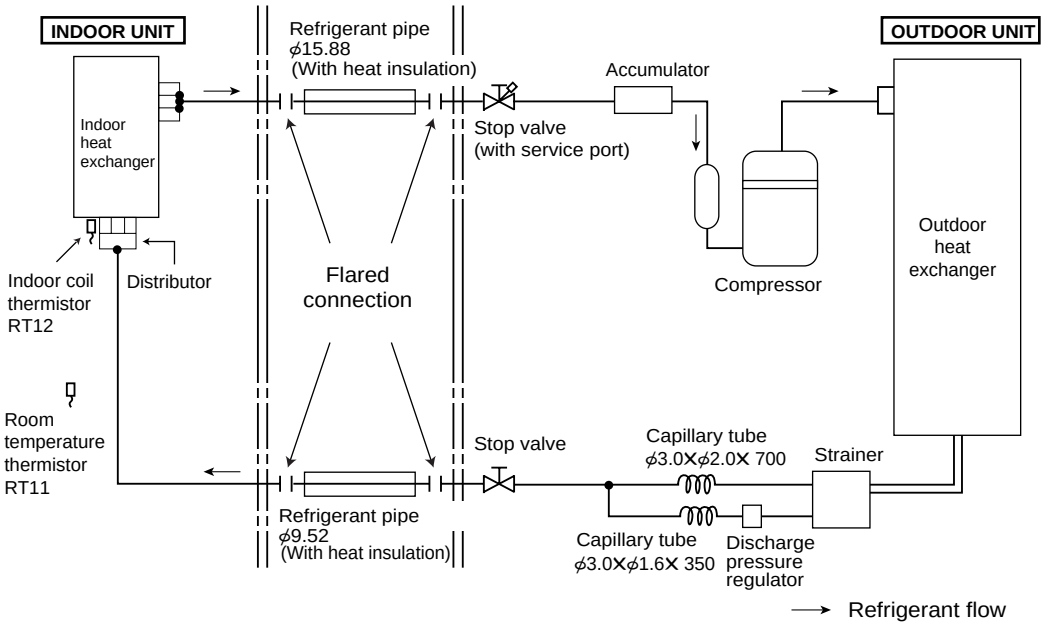


MCF-18NV - E3 MUCF-18NV- E3



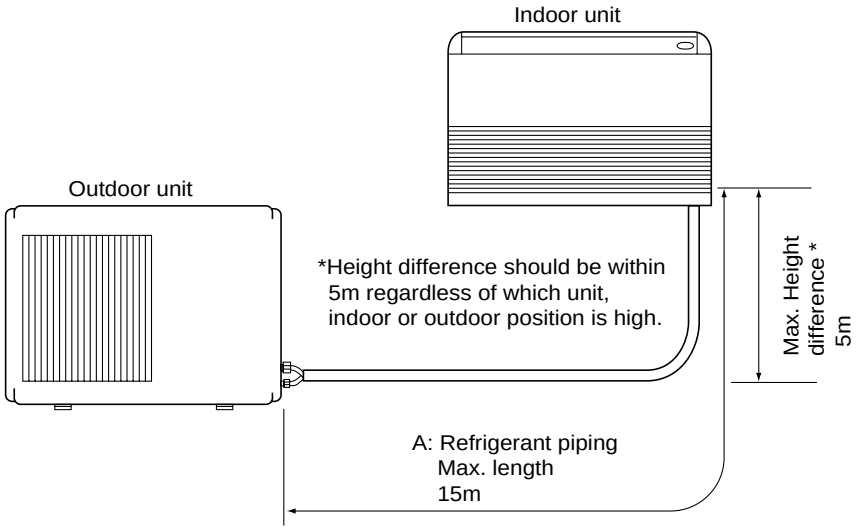
Unit:mm

MCF-24NV-E3 MUCF-24NV-E3



REFRIGERANT PIPING MAX. LENGTH & MAX. HEIGHT DIFFERENCE

Models	Refrigerant piping Max. length : m A	Piping size O.D. : mm	
		Gas	Liquid
MCF-13NV - E4	15	ϕ12.7	ϕ6.35
MCF-18NV - E3		ϕ15.88	ϕ9.52
MCF-24NV - E3			



ADDITIONAL REFRIGERANT CHARGE (R22 : g)

If pipe length exceeds 7m, additional refrigerant (R22) charge is required.

Models	Outdoor unit precharged	Refrigerant piping length (one way)								
		7m	8m	9m	10m	11m	12m	13m	14m	15m
MCF-13NV - E4	850	0	15	30	45	60	75	90	105	120
MCF-18NV - E3	1,500									
MCF-24NV - E3	2,150									

Calculation : Xg=15g/mX(Refrigerant piping length (m)-7)

8 PERFORMANCE CURVES

The standard data contained in these specifications apply only to the operation of the air conditioner under normal condition. Operating conditions vary according to the areas where these units are installed. The following information has been provided to clarify the operating characteristics of the air conditioner under the conditions indicated by the performance curve.

(1) GUARANTEED VOLTAGE

198~264V, 50Hz

(2) AIR FLOW

Air flow should be set at MAX.

(3) MAIN READINGS

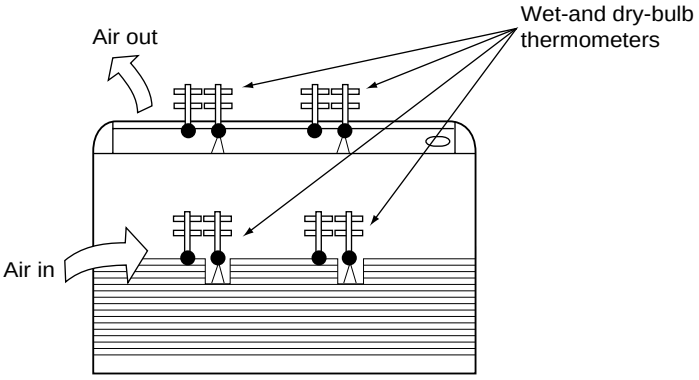
(1) Indoor intake air wet-bulb temperature : ˚C WB
(2) Indoor outlet air wet-bulb temperature : ˚C WB
(3) Outdoor intake air dry-bulb temperature : ˚C DB
(4) Total input : W

The table of Indoor air wet-bulb temperature difference at the bottom left on page 15 shows the difference between the indoor intake air wet-bulb temperature and the indoor outlet air wet-bulb temperature for your reference at service.

How to measure the indoor air wet-bulb temperature difference

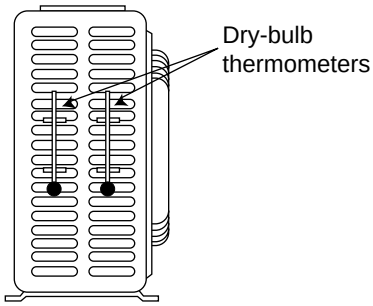
1. Attach at least 2. sets of wet-and-dry-bulb thermometers to the indoor air intake as shown in the figure, and at least 2 sets of wet-and-dry-bulb thermometers to the indoor air outlet. The thermometers must be attached to the position where air speed is high.
2. Attach at least 2 sets of dry-bulb thermometers to the outdoor air intake.
   Cover the thermometers to avoid direct rays of the sun.
3. Check that the air filter is cleaned.
4. Open windows and doors of the room.
5. Press the EMERGENCY OPERATION switch to start the EMERGENCY operation.
6. When system stabilizes after more than 15 minutes, measure temperature and take an average temperature.
7. 10 minutes later, measure temperature again and check that the temperature does not change.

INDOOR UNIT

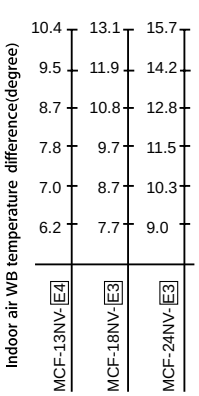


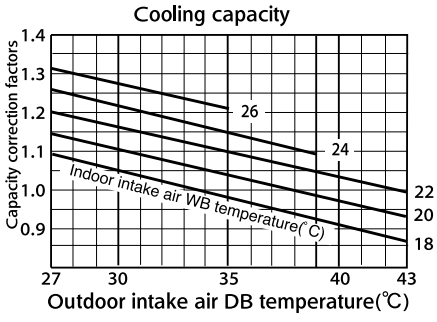
FRONT VIEW

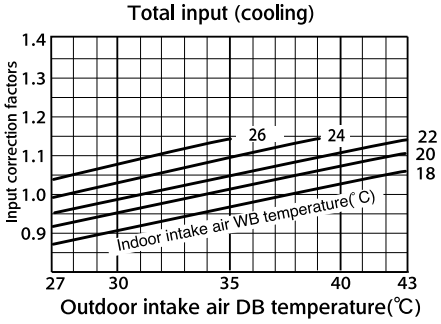
OUTDOOR UNIT



SIDE VIEW







OUTDOOR LOW PRESSURE AND OUTDOOR UNIT CURRENT

COOL operation

① Both indoor and outdoor units are under the same temperature/humidity condition.

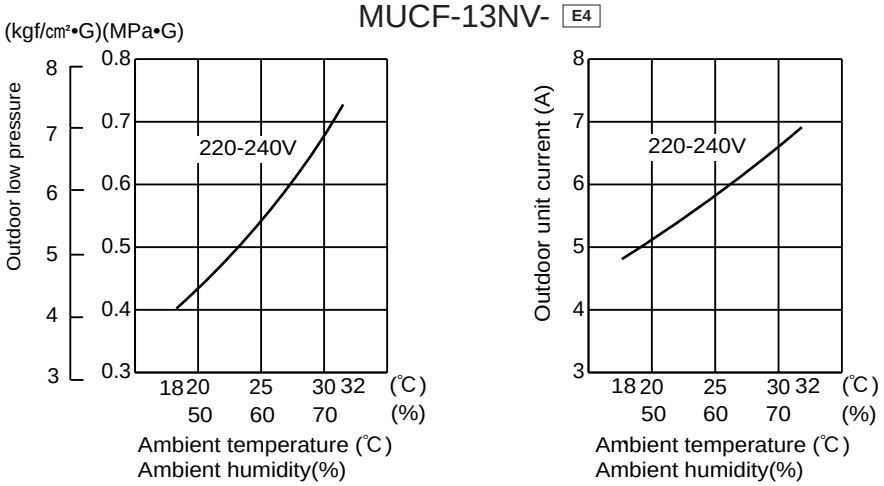
Dry Bulb temperature (˚C)	Relative humidity (%)
20	50
25	60
30	70

② Air flow should be set at MAX..

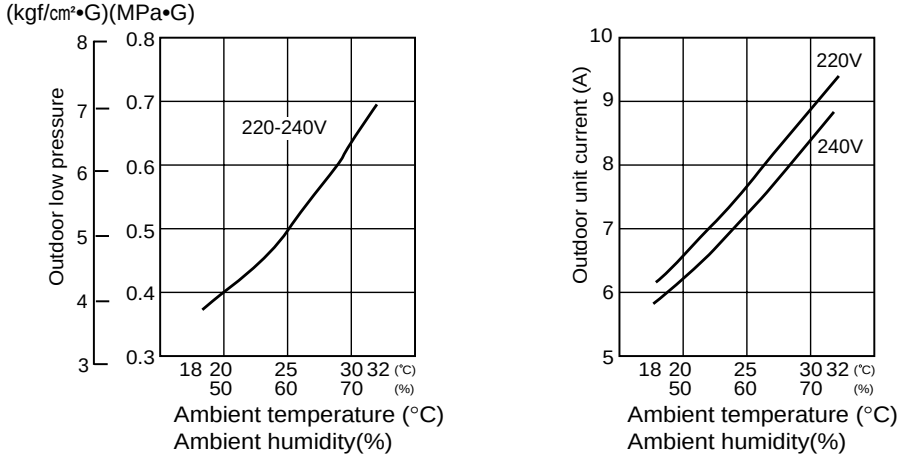
③ The unit of pressure has been changed to MPa on the international system of units(SI unit system). The converted score against the traditional unit system can be gotten according to the formula below.

1(MPa [Gauge]) =10.2(kgf/㎠ • [Gauge])

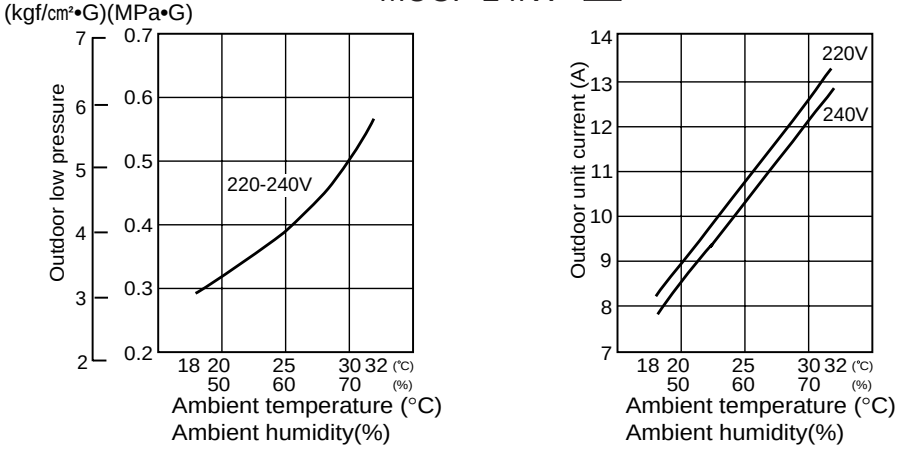
MUCF-13NV- E4



MUCF-18NV- E3



MUCF-24NV- E3



PERFORMANCE DATA
COOL operation(220V)
MCF-13NV -E4 :MUCF-13NV -E4

CAPACITY : 3.7(kW) SHF : 0.70 INPUT : 1310(W)

		OUTDOOR DB(℃)															
INDOOR	INDOOR	21				25				27				30			
DB(℃)	WB(℃)	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	4.35	2.26	0.52	1048	4.16	2.16	0.52	1100	4.00	2.08	0.52	1153	3.85	2.00	0.52	1205
21	20	4.53	1.81	0.40	1100	4.35	1.74	0.40	1166	4.22	1.69	0.40	1192	4.07	1.63	0.40	1245
22	18	4.35	2.43	0.56	1048	4.16	2.33	0.56	1100	4.00	2.24	0.56	1153	3.85	2.15	0.56	1205
22	20	4.53	1.99	0.44	1100	4.35	1.91	0.44	1166	4.22	1.86	0.44	1192	4.07	1.79	0.44	1245
22	22	4.72	1.51	0.32	1140	4.55	1.46	0.32	1212	4.44	1.42	0.32	1245	4.26	1.36	0.32	1297
23	18	4.35	2.61	0.60	1048	4.16	2.50	0.60	1100	4.00	2.40	0.60	1153	3.85	2.31	0.60	1205
23	20	4.53	2.18	0.48	1100	4.35	2.09	0.48	1166	4.22	2.02	0.48	1192	4.07	1.95	0.48	1245
23	22	4.72	1.70	0.36	1140	4.55	1.64	0.36	1212	4.44	1.60	0.36	1245	4.26	1.53	0.36	1297
24	18	4.35	2.78	0.64	1048	4.16	2.66	0.64	1100	4.00	2.56	0.64	1153	3.85	2.46	0.64	1205
24	20	4.53	2.36	0.52	1100	4.35	2.26	0.52	1166	4.22	2.19	0.52	1192	4.07	2.12	0.52	1245
24	22	4.72	1.89	0.40	1140	4.55	1.82	0.40	1212	4.44	1.78	0.40	1245	4.26	1.70	0.40	1297
24	24	4.96	1.39	0.28	1192	4.77	1.34	0.28	1258	4.66	1.31	0.28	1297	4.51	1.26	0.28	1362
25	18	4.35	2.96	0.68	1048	4.16	2.83	0.68	1100	4.00	2.72	0.68	1153	3.85	2.62	0.68	1205
25	20	4.53	2.54	0.56	1100	4.35	2.43	0.56	1166	4.22	2.36	0.56	1192	4.07	2.28	0.56	1245
25	22	4.72	2.08	0.44	1140	4.55	2.00	0.44	1212	4.44	1.95	0.44	1245	4.26	1.87	0.44	1297
25	24	4.96	1.59	0.32	1192	4.77	1.53	0.32	1258	4.66	1.49	0.32	1297	4.51	1.44	0.32	1362
26	18	4.35	3.13	0.72	1048	4.16	3.00	0.72	1100	4.00	2.88	0.72	1153	3.85	2.77	0.72	1205
26	20	4.53	2.72	0.60	1100	4.35	2.61	0.60	1166	4.22	2.53	0.60	1192	4.07	2.44	0.60	1245
26	22	4.72	2.26	0.48	1140	4.55	2.18	0.48	1212	4.44	2.13	0.48	1245	4.26	2.04	0.48	1297
26	24	4.96	1.78	0.36	1192	4.77	1.72	0.36	1258	4.66	1.68	0.36	1297	4.51	1.63	0.36	1362
26	26	5.11	1.23	0.24	1258	4.96	1.19	0.24	1323	4.88	1.17	0.24	1362	4.74	1.14	0.24	1402
27	18	4.35	3.30	0.76	1048	4.16	3.16	0.76	1100	4.00	3.04	0.76	1153	3.85	2.92	0.76	1205
27	20	4.53	2.90	0.64	1100	4.35	2.78	0.64	1166	4.22	2.70	0.64	1192	4.07	2.60	0.64	1245
27	22	4.72	2.45	0.52	1140	4.55	2.37	0.52	1212	4.44	2.31	0.52	1245	4.26	2.21	0.52	1297
27	24	4.96	1.98	0.40	1192	4.77	1.91	0.40	1258	4.66	1.86	0.40	1297	4.51	1.81	0.40	1362
27	26	5.11	1.43	0.28	1258	4.96	1.39	0.28	1323	4.88	1.37	0.28	1362	4.74	1.33	0.28	1402
28	18	4.35	3.48	0.80	1048	4.16	3.33	0.80	1100	4.00	3.20	0.80	1153	3.85	3.08	0.80	1205
28	20	4.53	3.08	0.68	1100	4.35	2.96	0.68	1166	4.22	2.87	0.68	1192	4.07	2.77	0.68	1245
28	22	4.72	2.64	0.56	1140	4.55	2.55	0.56	1212	4.44	2.49	0.56	1245	4.26	2.38	0.56	1297
28	24	4.96	2.18	0.44	1192	4.77	2.10	0.44	1258	4.66	2.05	0.44	1297	4.51	1.99	0.44	1362
28	26	5.11	1.63	0.32	1258	4.96	1.59	0.32	1323	4.88	1.56	0.32	1362	4.74	1.52	0.32	1402
29	18	4.35	3.65	0.84	1048	4.16	3.50	0.84	1100	4.00	3.36	0.84	1153	3.85	3.23	0.84	1205
29	20	4.53	3.26	0.72	1100	4.35	3.13	0.72	1166	4.22	3.04	0.72	1192	4.07	2.93	0.72	1245
29	22	4.72	2.83	0.60	1140	4.55	2.73	0.60	1212	4.44	2.66	0.60	1245	4.26	2.55	0.60	1297
29	24	4.96	2.38	0.48	1192	4.77	2.29	0.48	1258	4.66	2.24	0.48	1297	4.51	2.17	0.48	1362
29	26	5.11	1.84	0.36	1258	4.96	1.78	0.36	1323	4.88	1.76	0.36	1362	4.74	1.70	0.36	1402
30	18	4.35	3.83	0.88	1048	4.16	3.66	0.88	1100	4.00	3.52	0.88	1153	3.85	3.39	0.88	1205
30	20	4.53	3.44	0.76	1100	4.35	3.30	0.76	1166	4.22	3.21	0.76	1192	4.07	3.09	0.76	1245
30	22	4.72	3.02	0.64	1140	4.55	2.91	0.64	1212	4.44	2.84	0.64	1245	4.26	2.72	0.64	1297
30	24	4.96	2.58	0.52	1192	4.77	2.48	0.52	1258	4.66	2.42	0.52	1297	4.51	2.35	0.52	1362
30	26	5.11	2.04	0.40	1258	4.96	1.98	0.40	1323	4.88	1.95	0.40	1362	4.74	1.89	0.40	1402
31	18	4.35	4.00	0.92	1048	4.16	3.83	0.92	1100	4.00	3.68	0.92	1153	3.85	3.54	0.92	1205
31	20	4.53	3.63	0.80	1100	4.35	3.48	0.80	1166	4.22	3.37	0.80	1192	4.07	3.26	0.80	1245
31	22	4.72	3.21	0.68	1140	4.55	3.09	0.68	1212	4.44	3.02	0.68	1245	4.26	2.89	0.68	1297
31	24	4.96	2.78	0.56	1192	4.77	2.67	0.56	1258	4.66	2.61	0.56	1297	4.51	2.53	0.56	1362
31	26	5.11	2.25	0.44	1258	4.96	2.18	0.44	1323	4.88	2.15	0.44	1362	4.74	2.08	0.44	1402
32	18	4.35	4.17	0.96	1048	4.16	4.00	0.96	1100	4.00	3.84	0.96	1153	3.85	3.69	0.96	1205
32	20	4.53	3.81	0.84	1100	4.35	3.65	0.84	1166	4.22	3.54	0.84	1192	4.07	3.42	0.84	1245
32	22	4.72	3.40	0.72	1140	4.55	3.28	0.72	1212	4.44	3.20	0.72	1245	4.26	3.06	0.72	1297
32	24	4.96	2.97	0.60	1192	4.77	2.86	0.60	1258	4.66	2.80	0.60	1297	4.51	2.71	0.60	1362
32	26	5.11	2.45	0.48	1258	4.96	2.38	0.48	1323	4.88	2.34	0.48	1362	4.74	2.27	0.48	1402

PERFORMANCE DATA

COOL operation(220V)

MCF-13NV -E4 :MUCF-13NV -E4

CAPACITY : 3.7(kW) SHF : 0.70 INPUT : 1310(W)

		OUTDOOR DB(℃)															
INDOOR DB(℃)	INDOOR WB(℃)	35				40				43				46			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	3.63	1.89	0.52	1284	3.33	1.73	0.52	1362	3.20	1.66	0.52	1389	3.07	1.60	0.52	1415
21	20	3.81	1.52	0.40	1336	3.55	1.42	0.40	1402	3.42	1.37	0.40	1441	3.29	1.32	0.40	1480
22	18	3.63	2.03	0.56	1284	3.33	1.86	0.56	1362	3.20	1.79	0.56	1389	3.07	1.72	0.56	1415
22	20	3.81	1.68	0.44	1336	3.55	1.56	0.44	1402	3.42	1.51	0.44	1441	3.29	1.45	0.44	1480
22	22	4.03	1.29	0.32	1389	3.77	1.21	0.32	1467	3.64	1.17	0.32	1493	3.52	1.12	0.32	1520
23	18	3.63	2.18	0.60	1284	3.33	2.00	0.60	1362	3.20	1.92	0.60	1389	3.07	1.84	0.60	1415
23	20	3.81	1.83	0.48	1336	3.55	1.70	0.48	1402	3.42	1.64	0.48	1441	3.29	1.58	0.48	1480
23	22	4.03	1.45	0.36	1389	3.77	1.36	0.36	1467	3.64	1.31	0.36	1493	3.52	1.27	0.36	1520
24	18	3.63	2.32	0.64	1284	3.33	2.13	0.64	1362	3.20	2.05	0.64	1389	3.07	1.97	0.64	1415
24	20	3.81	1.98	0.52	1336	3.55	1.85	0.52	1402	3.42	1.78	0.52	1441	3.29	1.71	0.52	1480
24	22	4.03	1.61	0.40	1389	3.77	1.51	0.40	1467	3.64	1.46	0.40	1493	3.52	1.41	0.40	1520
24	24	4.26	1.19	0.28	1441	4.00	1.12	0.28	1507	3.89	1.09	0.28	1539	3.77	1.06	0.28	1572
25	18	3.63	2.47	0.68	1284	3.33	2.26	0.68	1362	3.20	2.18	0.68	1389	3.07	2.09	0.68	1415
25	20	3.81	2.13	0.56	1336	3.55	1.99	0.56	1402	3.42	1.92	0.56	1441	3.29	1.84	0.56	1480
25	22	4.03	1.77	0.44	1389	3.77	1.66	0.44	1467	3.64	1.60	0.44	1493	3.52	1.55	0.44	1520
25	24	4.26	1.36	0.32	1441	4.00	1.28	0.32	1507	3.89	1.24	0.32	1539	3.77	1.21	0.32	1572
26	18	3.63	2.61	0.72	1284	3.33	2.40	0.72	1362	3.20	2.30	0.72	1389	3.07	2.21	0.72	1415
26	20	3.81	2.29	0.60	1336	3.55	2.13	0.60	1402	3.42	2.05	0.60	1441	3.29	1.98	0.60	1480
26	22	4.03	1.94	0.48	1389	3.77	1.81	0.48	1467	3.64	1.75	0.48	1493	3.52	1.69	0.48	1520
26	24	4.26	1.53	0.36	1441	4.00	1.44	0.36	1507	3.89	1.40	0.36	1539	3.77	1.36	0.36	1572
26	26	4.48	1.07	0.24	1493	4.22	1.01	0.24	1559	4.09	0.98	0.24	1592	3.96	0.95	0.24	1624
27	18	3.63	2.76	0.76	1284	3.33	2.53	0.76	1362	3.20	2.43	0.76	1389	3.07	2.33	0.76	1415
27	20	3.81	2.44	0.64	1336	3.55	2.27	0.64	1402	3.42	2.19	0.64	1441	3.29	2.11	0.64	1480
27	22	4.03	2.10	0.52	1389	3.77	1.96	0.52	1467	3.64	1.90	0.52	1493	3.52	1.83	0.52	1520
27	24	4.26	1.70	0.40	1441	4.00	1.60	0.40	1507	3.89	1.55	0.40	1539	3.77	1.51	0.40	1572
27	26	4.48	1.25	0.28	1493	4.22	1.18	0.28	1559	4.09	1.14	0.28	1592	3.96	1.11	0.28	1624
28	18	3.63	2.90	0.80	1284	3.33	2.66	0.80	1362	3.20	2.56	0.80	1389	3.07	2.46	0.80	1415
28	20	3.81	2.59	0.68	1336	3.55	2.42	0.68	1402	3.42	2.33	0.68	1441	3.29	2.24	0.68	1480
28	22	4.03	2.26	0.56	1389	3.77	2.11	0.56	1467	3.64	2.04	0.56	1493	3.52	1.97	0.56	1520
28	24	4.26	1.87	0.44	1441	4.00	1.76	0.44	1507	3.89	1.71	0.44	1539	3.77	1.66	0.44	1572
28	26	4.48	1.43	0.32	1493	4.22	1.35	0.32	1559	4.09	1.31	0.32	1592	3.96	1.27	0.32	1624
29	18	3.63	3.05	0.84	1284	3.33	2.80	0.84	1362	3.20	2.69	0.84	1389	3.07	2.58	0.84	1415
29	20	3.81	2.74	0.72	1336	3.55	2.56	0.72	1402	3.42	2.46	0.72	1441	3.29	2.37	0.72	1480
29	22	4.03	2.42	0.60	1389	3.77	2.26	0.60	1467	3.64	2.19	0.60	1493	3.52	2.11	0.60	1520
29	24	4.26	2.04	0.48	1441	4.00	1.92	0.48	1507	3.89	1.86	0.48	1539	3.77	1.81	0.48	1572
29	26	4.48	1.61	0.36	1493	4.22	1.52	0.36	1559	4.09	1.47	0.36	1592	3.96	1.43	0.36	1624
30	18	3.63	3.19	0.88	1284	3.33	2.93	0.88	1362	3.20	2.82	0.88	1389	3.07	2.70	0.88	1415
30	20	3.81	2.90	0.76	1336	3.55	2.70	0.76	1402	3.42	2.60	0.76	1441	3.29	2.50	0.76	1480
30	22	4.03	2.58	0.64	1389	3.77	2.42	0.64	1467	3.64	2.33	0.64	1493	3.52	2.25	0.64	1520
30	24	4.26	2.21	0.52	1441	4.00	2.08	0.52	1507	3.89	2.02	0.52	1539	3.77	1.96	0.52	1572
30	26	4.48	1.79	0.40	1493	4.22	1.69	0.40	1559	4.09	1.64	0.40	1592	3.96	1.58	0.40	1624
31	18	3.63	3.34	0.92	1284	3.33	3.06	0.92	1362	3.20	2.94	0.92	1389	3.07	2.83	0.92	1415
31	20	3.81	3.05	0.80	1336	3.55	2.84	0.80	1402	3.42	2.74	0.80	1441	3.29	2.63	0.80	1480
31	22	4.03	2.74	0.68	1389	3.77	2.57	0.68	1467	3.64	2.48	0.68	1493	3.52	2.39	0.68	1520
31	24	4.26	2.38	0.56	1441	4.00	2.24	0.56	1507	3.89	2.18	0.56	1539	3.77	2.11	0.56	1572
31	26	4.48	1.97	0.44	1493	4.22	1.86	0.44	1559	4.09	1.80	0.44	1592	3.96	1.74	0.44	1624
32	18	3.63	3.48	0.96	1284	3.33	3.20	0.96	1362	3.20	3.07	0.96	1389	3.07	2.95	0.96	1415
32	20	3.81	3.20	0.84	1336	3.55	2.98	0.84	1402	3.42	2.87	0.84	1441	3.29	2.77	0.84	1480
32	22	4.03	2.90	0.72	1389	3.77	2.72	0.72	1467	3.64	2.62	0.72	1493	3.52	2.53	0.72	1520
32	24	4.26	2.55	0.60	1441	4.00	2.40	0.60	1507	3.89	2.33	0.60	1539	3.77	2.26	0.60	1572
32	26	4.48	2.15	0.48	1493	4.22	2.02	0.48	1559	4.09	1.96	0.48	1592	3.96	1.90	0.48	1624

PERFORMANCE DATA

COOL operation(240V)

MCF-13NV -E4 :MUCF-13NV -E4

CAPACITY : 3.7(kW) SHF : 0.70 INPUT : 1380(W)

		OUTDOOR DB(℃)															
INDOOR	INDOOR	21				25				27				30			
DB(℃)	WB(℃)	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	4.35	2.26	0.52	1104	4.16	2.16	0.52	1159	4.00	2.08	0.52	1214	3.85	2.00	0.52	1270
21	20	4.53	1.81	0.40	1159	4.35	1.74	0.40	1228	4.22	1.69	0.40	1256	4.07	1.63	0.40	1311
22	18	4.35	2.43	0.56	1104	4.16	2.33	0.56	1159	4.00	2.24	0.56	1214	3.85	2.15	0.56	1270
22	20	4.53	1.99	0.44	1159	4.35	1.91	0.44	1228	4.22	1.86	0.44	1256	4.07	1.79	0.44	1311
22	22	4.72	1.51	0.32	1201	4.55	1.46	0.32	1277	4.44	1.42	0.32	1311	4.26	1.36	0.32	1366
23	18	4.35	2.61	0.60	1104	4.16	2.50	0.60	1159	4.00	2.40	0.60	1214	3.85	2.31	0.60	1270
23	20	4.53	2.18	0.48	1159	4.35	2.09	0.48	1228	4.22	2.02	0.48	1256	4.07	1.95	0.48	1311
23	22	4.72	1.70	0.36	1201	4.55	1.64	0.36	1277	4.44	1.60	0.36	1311	4.26	1.53	0.36	1366
24	18	4.35	2.78	0.64	1104	4.16	2.66	0.64	1159	4.00	2.56	0.64	1214	3.85	2.46	0.64	1270
24	20	4.53	2.36	0.52	1159	4.35	2.26	0.52	1228	4.22	2.19	0.52	1256	4.07	2.12	0.52	1311
24	22	4.72	1.89	0.40	1201	4.55	1.82	0.40	1277	4.44	1.78	0.40	1311	4.26	1.70	0.40	1366
24	24	4.96	1.39	0.28	1256	4.77	1.34	0.28	1325	4.66	1.31	0.28	1366	4.51	1.26	0.28	1435
25	18	4.35	2.96	0.68	1104	4.16	2.83	0.68	1159	4.00	2.72	0.68	1214	3.85	2.62	0.68	1270
25	20	4.53	2.54	0.56	1159	4.35	2.43	0.56	1228	4.22	2.36	0.56	1256	4.07	2.28	0.56	1311
25	22	4.72	2.08	0.44	1201	4.55	2.00	0.44	1277	4.44	1.95	0.44	1311	4.26	1.87	0.44	1366
25	24	4.96	1.59	0.32	1256	4.77	1.53	0.32	1325	4.66	1.49	0.32	1366	4.51	1.44	0.32	1435
26	18	4.35	3.13	0.72	1104	4.16	3.00	0.72	1159	4.00	2.88	0.72	1214	3.85	2.77	0.72	1270
26	20	4.53	2.72	0.60	1159	4.35	2.61	0.60	1228	4.22	2.53	0.60	1256	4.07	2.44	0.60	1311
26	22	4.72	2.26	0.48	1201	4.55	2.18	0.48	1277	4.44	2.13	0.48	1311	4.26	2.04	0.48	1366
26	24	4.96	1.78	0.36	1256	4.77	1.72	0.36	1325	4.66	1.68	0.36	1366	4.51	1.63	0.36	1435
26	26	5.11	1.23	0.24	1325	4.96	1.19	0.24	1394	4.88	1.17	0.24	1435	4.74	1.14	0.24	1477
27	18	4.35	3.30	0.76	1104	4.16	3.16	0.76	1159	4.00	3.04	0.76	1214	3.85	2.92	0.76	1270
27	20	4.53	2.90	0.64	1159	4.35	2.78	0.64	1228	4.22	2.70	0.64	1256	4.07	2.60	0.64	1311
27	22	4.72	2.45	0.52	1201	4.55	2.37	0.52	1277	4.44	2.31	0.52	1311	4.26	2.21	0.52	1366
27	24	4.96	1.98	0.40	1256	4.77	1.91	0.40	1325	4.66	1.86	0.40	1366	4.51	1.81	0.40	1435
27	26	5.11	1.43	0.28	1325	4.96	1.39	0.28	1394	4.88	1.37	0.28	1435	4.74	1.33	0.28	1477
28	18	4.35	3.48	0.80	1104	4.16	3.33	0.80	1159	4.00	3.20	0.80	1214	3.85	3.08	0.80	1270
28	20	4.53	3.08	0.68	1159	4.35	2.96	0.68	1228	4.22	2.87	0.68	1256	4.07	2.77	0.68	1311
28	22	4.72	2.64	0.56	1201	4.55	2.55	0.56	1277	4.44	2.49	0.56	1311	4.26	2.38	0.56	1366
28	24	4.96	2.18	0.44	1256	4.77	2.10	0.44	1325	4.66	2.05	0.44	1366	4.51	1.99	0.44	1435
28	26	5.11	1.63	0.32	1325	4.96	1.59	0.32	1394	4.88	1.56	0.32	1435	4.74	1.52	0.32	1477
29	18	4.35	3.65	0.84	1104	4.16	3.50	0.84	1159	4.00	3.36	0.84	1214	3.85	3.23	0.84	1270
29	20	4.53	3.26	0.72	1159	4.35	3.13	0.72	1228	4.22	3.04	0.72	1256	4.07	2.93	0.72	1311
29	22	4.72	2.83	0.60	1201	4.55	2.73	0.60	1277	4.44	2.66	0.60	1311	4.26	2.55	0.60	1366
29	24	4.96	2.38	0.48	1256	4.77	2.29	0.48	1325	4.66	2.24	0.48	1366	4.51	2.17	0.48	1435
29	26	5.11	1.84	0.36	1325	4.96	1.78	0.36	1394	4.88	1.76	0.36	1435	4.74	1.70	0.36	1477
30	18	4.35	3.83	0.88	1104	4.16	3.66	0.88	1159	4.00	3.52	0.88	1214	3.85	3.39	0.88	1270
30	20	4.53	3.44	0.76	1159	4.35	3.30	0.76	1228	4.22	3.21	0.76	1256	4.07	3.09	0.76	1311
30	22	4.72	3.02	0.64	1201	4.55	2.91	0.64	1277	4.44	2.84	0.64	1311	4.26	2.72	0.64	1366
30	24	4.96	2.58	0.52	1256	4.77	2.48	0.52	1325	4.66	2.42	0.52	1366	4.51	2.35	0.52	1435
30	26	5.11	2.04	0.40	1325	4.96	1.98	0.40	1394	4.88	1.95	0.40	1435	4.74	1.89	0.40	1477
31	18	4.35	4.00	0.92	1104	4.16	3.83	0.92	1159	4.00	3.68	0.92	1214	3.85	3.54	0.92	1270
31	20	4.53	3.63	0.80	1159	4.35	3.48	0.80	1228	4.22	3.37	0.80	1256	4.07	3.26	0.80	1311
31	22	4.72	3.21	0.68	1201	4.55	3.09	0.68	1277	4.44	3.02	0.68	1311	4.26	2.89	0.68	1366
31	24	4.96	2.78	0.56	1256	4.77	2.67	0.56	1325	4.66	2.61	0.56	1366	4.51	2.53	0.56	1435
31	26	5.11	2.25	0.44	1325	4.96	2.18	0.44	1394	4.88	2.15	0.44	1435	4.74	2.08	0.44	1477
32	18	4.35	4.17	0.96	1104	4.16	4.00	0.96	1159	4.00	3.84	0.96	1214	3.85	3.69	0.96	1270
32	20	4.53	3.81	0.84	1159	4.35	3.65	0.84	1228	4.22	3.54	0.84	1256	4.07	3.42	0.84	1311
32	22	4.72	3.40	0.72	1201	4.55	3.28	0.72	1277	4.44	3.20	0.72	1311	4.26	3.06	0.72	1366
32	24	4.96	2.97	0.60	1256	4.77	2.86	0.60	1325	4.66	2.80	0.60	1366	4.51	2.71	0.60	1435
32	26	5.11	2.45	0.48	1325	4.96	2.38	0.48	1394	4.88	2.34	0.48	1435	4.74	2.27	0.48	1477

PERFORMANCE DATA

COOL operation(240V)

MCF-13NV -E4 :MUCF-13NV -E4

CAPACITY : 3.7(kW) SHF : 0.70 INPUT : 1380(W)

		OUTDOOR DB(℃)															
INDOOR	INDOOR	35				40				43				46			
DB(℃)	WB(℃)	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	3.63	1.89	0.52	1352	3.33	1.73	0.52	1435	3.20	1.66	0.52	1463	3.07	1.60	0.52	1490
21	20	3.81	1.52	0.40	1408	3.55	1.42	0.40	1477	3.42	1.37	0.40	1518	3.29	1.32	0.40	1559
22	18	3.63	2.03	0.56	1352	3.33	1.86	0.56	1435	3.20	1.79	0.56	1463	3.07	1.72	0.56	1490
22	20	3.81	1.68	0.44	1408	3.55	1.56	0.44	1477	3.42	1.51	0.44	1518	3.29	1.45	0.44	1559
22	22	4.03	1.29	0.32	1463	3.77	1.21	0.32	1546	3.64	1.17	0.32	1573	3.52	1.12	0.32	1601
23	18	3.63	2.18	0.60	1352	3.33	2.00	0.60	1435	3.20	1.92	0.60	1463	3.07	1.84	0.60	1490
23	20	3.81	1.83	0.48	1408	3.55	1.70	0.48	1477	3.42	1.64	0.48	1518	3.29	1.58	0.48	1559
23	22	4.03	1.45	0.36	1463	3.77	1.36	0.36	1546	3.64	1.31	0.36	1573	3.52	1.27	0.36	1601
24	18	3.63	2.32	0.64	1352	3.33	2.13	0.64	1435	3.20	2.05	0.64	1463	3.07	1.97	0.64	1490
24	20	3.81	1.98	0.52	1408	3.55	1.85	0.52	1477	3.42	1.78	0.52	1518	3.29	1.71	0.52	1559
24	22	4.03	1.61	0.40	1463	3.77	1.51	0.40	1546	3.64	1.46	0.40	1573	3.52	1.41	0.40	1601
24	24	4.26	1.19	0.28	1518	4.00	1.12	0.28	1587	3.89	1.09	0.28	1622	3.77	1.06	0.28	1656
25	18	3.63	2.47	0.68	1352	3.33	2.26	0.68	1435	3.20	2.18	0.68	1463	3.07	2.09	0.68	1490
25	20	3.81	2.13	0.56	1408	3.55	1.99	0.56	1477	3.42	1.92	0.56	1518	3.29	1.84	0.56	1559
25	22	4.03	1.77	0.44	1463	3.77	1.66	0.44	1546	3.64	1.60	0.44	1573	3.52	1.55	0.44	1601
25	24	4.26	1.36	0.32	1518	4.00	1.28	0.32	1587	3.89	1.24	0.32	1622	3.77	1.21	0.32	1656
26	18	3.63	2.61	0.72	1352	3.33	2.40	0.72	1435	3.20	2.30	0.72	1463	3.07	2.21	0.72	1490
26	20	3.81	2.29	0.60	1408	3.55	2.13	0.60	1477	3.42	2.05	0.60	1518	3.29	1.98	0.60	1559
26	22	4.03	1.94	0.48	1463	3.77	1.81	0.48	1546	3.64	1.75	0.48	1573	3.52	1.69	0.48	1601
26	24	4.26	1.53	0.36	1518	4.00	1.44	0.36	1587	3.89	1.40	0.36	1622	3.77	1.36	0.36	1656
26	26	4.48	1.07	0.24	1573	4.22	1.01	0.24	1642	4.09	0.98	0.24	1677	3.96	0.95	0.24	1711
27	18	3.63	2.76	0.76	1352	3.33	2.53	0.76	1435	3.20	2.43	0.76	1463	3.07	2.33	0.76	1490
27	20	3.81	2.44	0.64	1408	3.55	2.27	0.64	1477	3.42	2.19	0.64	1518	3.29	2.11	0.64	1559
27	22	4.03	2.10	0.52	1463	3.77	1.96	0.52	1546	3.64	1.90	0.52	1573	3.52	1.83	0.52	1601
27	24	4.26	1.70	0.40	1518	4.00	1.60	0.40	1587	3.89	1.55	0.40	1622	3.77	1.51	0.40	1656
27	26	4.48	1.25	0.28	1573	4.22	1.18	0.28	1642	4.09	1.14	0.28	1677	3.96	1.11	0.28	1711
28	18	3.63	2.90	0.80	1352	3.33	2.66	0.80	1435	3.20	2.56	0.80	1463	3.07	2.46	0.80	1490
28	20	3.81	2.59	0.68	1408	3.55	2.42	0.68	1477	3.42	2.33	0.68	1518	3.29	2.24	0.68	1559
28	22	4.03	2.26	0.56	1463	3.77	2.11	0.56	1546	3.64	2.04	0.56	1573	3.52	1.97	0.56	1601
28	24	4.26	1.87	0.44	1518	4.00	1.76	0.44	1587	3.89	1.71	0.44	1622	3.77	1.66	0.44	1656
28	26	4.48	1.43	0.32	1573	4.22	1.35	0.32	1642	4.09	1.31	0.32	1677	3.96	1.27	0.32	1711
29	18	3.63	3.05	0.84	1352	3.33	2.80	0.84	1435	3.20	2.69	0.84	1463	3.07	2.58	0.84	1490
29	20	3.81	2.74	0.72	1408	3.55	2.56	0.72	1477	3.42	2.46	0.72	1518	3.29	2.37	0.72	1559
29	22	4.03	2.42	0.60	1463	3.77	2.26	0.60	1546	3.64	2.19	0.60	1573	3.52	2.11	0.60	1601
29	24	4.26	2.04	0.48	1518	4.00	1.92	0.48	1587	3.89	1.86	0.48	1622	3.77	1.81	0.48	1656
29	26	4.48	1.61	0.36	1573	4.22	1.52	0.36	1642	4.09	1.47	0.36	1677	3.96	1.43	0.36	1711
30	18	3.63	3.19	0.88	1352	3.33	2.93	0.88	1435	3.20	2.82	0.88	1463	3.07	2.70	0.88	1490
30	20	3.81	2.90	0.76	1408	3.55	2.70	0.76	1477	3.42	2.60	0.76	1518	3.29	2.50	0.76	1559
30	22	4.03	2.58	0.64	1463	3.77	2.42	0.64	1546	3.64	2.33	0.64	1573	3.52	2.25	0.64	1601
30	24	4.26	2.21	0.52	1518	4.00	2.08	0.52	1587	3.89	2.02	0.52	1622	3.77	1.96	0.52	1656
30	26	4.48	1.79	0.40	1573	4.22	1.69	0.40	1642	4.09	1.64	0.40	1677	3.96	1.58	0.40	1711
31	18	3.63	3.34	0.92	1352	3.33	3.06	0.92	1435	3.20	2.94	0.92	1463	3.07	2.83	0.92	1490
31	20	3.81	3.05	0.80	1408	3.55	2.84	0.80	1477	3.42	2.74	0.80	1518	3.29	2.63	0.80	1559
31	22	4.03	2.74	0.68	1463	3.77	2.57	0.68	1546	3.64	2.48	0.68	1573	3.52	2.39	0.68	1601
31	24	4.26	2.38	0.56	1518	4.00	2.24	0.56	1587	3.89	2.18	0.56	1622	3.77	2.11	0.56	1656
31	26	4.48	1.97	0.44	1573	4.22	1.86	0.44	1642	4.09	1.80	0.44	1677	3.96	1.74	0.44	1711
32	18	3.63	3.48	0.96	1352	3.33	3.20	0.96	1435	3.20	3.07	0.96	1463	3.07	2.95	0.96	1490
32	20	3.81	3.20	0.84	1408	3.55	2.98	0.84	1477	3.42	2.87	0.84	1518	3.29	2.77	0.84	1559
32	22	4.03	2.90	0.72	1463	3.77	2.72	0.72	1546	3.64	2.62	0.72	1573	3.52	2.53	0.72	1601
32	24	4.26	2.55	0.60	1518	4.00	2.40	0.60	1587	3.89	2.33	0.60	1622	3.77	2.26	0.60	1656
32	26	4.48	2.15	0.48	1573	4.22	2.02	0.48	1642	4.09	1.96	0.48	1677	3.96	1.90	0.48	1711

PERFORMANCE DATA

COOL operation(220V)

MCF-18NV -E3 :MUCF-18NV -E3

CAPACITY : 5.0(kW) SHF : 0.67 INPUT : 1920(W)

		OUTDOOR DB(℃)															
INDOOR DB(℃)	INDOOR WB(℃)	21				25				27				30			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	5.88	2.88	0.49	1536	5.63	2.76	0.49	1613	5.40	2.65	0.49	1690	5.20	2.55	0.49	1766
21	20	6.13	2.27	0.37	1613	5.88	2.17	0.37	1709	5.70	2.11	0.37	1747	5.50	2.04	0.37	1824
22	18	5.88	3.11	0.53	1536	5.63	2.98	0.53	1613	5.40	2.86	0.53	1690	5.20	2.76	0.53	1766
22	20	6.13	2.51	0.41	1613	5.88	2.41	0.41	1709	5.70	2.34	0.41	1747	5.50	2.26	0.41	1824
22	22	6.38	1.85	0.29	1670	6.15	1.78	0.29	1776	6.00	1.74	0.29	1824	5.75	1.67	0.29	1901
23	18	5.88	3.35	0.57	1536	5.63	3.21	0.57	1613	5.40	3.08	0.57	1690	5.20	2.96	0.57	1766
23	20	6.13	2.76	0.45	1613	5.88	2.64	0.45	1709	5.70	2.57	0.45	1747	5.50	2.48	0.45	1824
23	22	6.38	2.10	0.33	1670	6.15	2.03	0.33	1776	6.00	1.98	0.33	1824	5.75	1.90	0.33	1901
24	18	5.88	3.58	0.61	1536	5.63	3.43	0.61	1613	5.40	3.29	0.61	1690	5.20	3.17	0.61	1766
24	20	6.13	3.00	0.49	1613	5.88	2.88	0.49	1709	5.70	2.79	0.49	1747	5.50	2.70	0.49	1824
24	22	6.38	2.36	0.37	1670	6.15	2.28	0.37	1776	6.00	2.22	0.37	1824	5.75	2.13	0.37	1901
24	24	6.70	1.68	0.25	1747	6.45	1.61	0.25	1843	6.30	1.58	0.25	1901	6.10	1.53	0.25	1997
25	18	5.88	3.82	0.65	1536	5.63	3.66	0.65	1613	5.40	3.51	0.65	1690	5.20	3.38	0.65	1766
25	20	6.13	3.25	0.53	1613	5.88	3.11	0.53	1709	5.70	3.02	0.53	1747	5.50	2.92	0.53	1824
25	22	6.38	2.61	0.41	1670	6.15	2.52	0.41	1776	6.00	2.46	0.41	1824	5.75	2.36	0.41	1901
25	24	6.70	1.94	0.29	1747	6.45	1.87	0.29	1843	6.30	1.83	0.29	1901	6.10	1.77	0.29	1997
26	18	5.88	4.05	0.69	1536	5.63	3.88	0.69	1613	5.40	3.73	0.69	1690	5.20	3.59	0.69	1766
26	20	6.13	3.49	0.57	1613	5.88	3.35	0.57	1709	5.70	3.25	0.57	1747	5.50	3.14	0.57	1824
26	22	6.38	2.87	0.45	1670	6.15	2.77	0.45	1776	6.00	2.70	0.45	1824	5.75	2.59	0.45	1901
26	24	6.70	2.21	0.33	1747	6.45	2.13	0.33	1843	6.30	2.08	0.33	1901	6.10	2.01	0.33	1997
26	26	6.90	1.45	0.21	1843	6.70	1.41	0.21	1939	6.60	1.39	0.21	1997	6.40	1.34	0.21	2054
27	18	5.88	4.29	0.73	1536	5.63	4.11	0.73	1613	5.40	3.94	0.73	1690	5.20	3.80	0.73	1766
27	20	6.13	3.74	0.61	1613	5.88	3.58	0.61	1709	5.70	3.48	0.61	1747	5.50	3.36	0.61	1824
27	22	6.38	3.12	0.49	1670	6.15	3.01	0.49	1776	6.00	2.94	0.49	1824	5.75	2.82	0.49	1901
27	24	6.70	2.48	0.37	1747	6.45	2.39	0.37	1843	6.30	2.33	0.37	1901	6.10	2.26	0.37	1997
27	26	6.90	1.73	0.25	1843	6.70	1.68	0.25	1939	6.60	1.65	0.25	1997	6.40	1.60	0.25	2054
28	18	5.88	4.52	0.77	1536	5.63	4.33	0.77	1613	5.40	4.16	0.77	1690	5.20	4.00	0.77	1766
28	20	6.13	3.98	0.65	1613	5.88	3.82	0.65	1709	5.70	3.71	0.65	1747	5.50	3.58	0.65	1824
28	22	6.38	3.38	0.53	1670	6.15	3.26	0.53	1776	6.00	3.18	0.53	1824	5.75	3.05	0.53	1901
28	24	6.70	2.75	0.41	1747	6.45	2.64	0.41	1843	6.30	2.58	0.41	1901	6.10	2.50	0.41	1997
28	26	6.90	2.00	0.29	1843	6.70	1.94	0.29	1939	6.60	1.91	0.29	1997	6.40	1.86	0.29	2054
29	18	5.88	4.76	0.81	1536	5.63	4.56	0.81	1613	5.40	4.37	0.81	1690	5.20	4.21	0.81	1766
29	20	6.13	4.23	0.69	1613	5.88	4.05	0.69	1709	5.70	3.93	0.69	1747	5.50	3.80	0.69	1824
29	22	6.38	3.63	0.57	1670	6.15	3.51	0.57	1776	6.00	3.42	0.57	1824	5.75	3.28	0.57	1901
29	24	6.70	3.02	0.45	1747	6.45	2.90	0.45	1843	6.30	2.84	0.45	1901	6.10	2.75	0.45	1997
29	26	6.90	2.28	0.33	1843	6.70	2.21	0.33	1939	6.60	2.18	0.33	1997	6.40	2.11	0.33	2054
30	18	5.88	4.99	0.85	1536	5.63	4.78	0.85	1613	5.40	4.59	0.85	1690	5.20	4.42	0.85	1766
30	20	6.13	4.47	0.73	1613	5.88	4.29	0.73	1709	5.70	4.16	0.73	1747	5.50	4.02	0.73	1824
30	22	6.38	3.89	0.61	1670	6.15	3.75	0.61	1776	6.00	3.66	0.61	1824	5.75	3.51	0.61	1901
30	24	6.70	3.28	0.49	1747	6.45	3.16	0.49	1843	6.30	3.09	0.49	1901	6.10	2.99	0.49	1997
30	26	6.90	2.55	0.37	1843	6.70	2.48	0.37	1939	6.60	2.44	0.37	1997	6.40	2.37	0.37	2054
31	18	5.88	5.23	0.89	1536	5.63	5.01	0.89	1613	5.40	4.81	0.89	1690	5.20	4.63	0.89	1766
31	20	6.13	4.72	0.77	1613	5.88	4.52	0.77	1709	5.70	4.39	0.77	1747	5.50	4.24	0.77	1824
31	22	6.38	4.14	0.65	1670	6.15	4.00	0.65	1776	6.00	3.90	0.65	1824	5.75	3.74	0.65	1901
31	24	6.70	3.55	0.53	1747	6.45	3.42	0.53	1843	6.30	3.34	0.53	1901	6.10	3.23	0.53	1997
31	26	6.90	2.83	0.41	1843	6.70	2.75	0.41	1939	6.60	2.71	0.41	1997	6.40	2.62	0.41	2054
32	18	5.88	5.46	0.93	1536	5.63	5.23	0.93	1613	5.40	5.02	0.93	1690	5.20	4.84	0.93	1766
32	20	6.13	4.96	0.81	1613	5.88	4.76	0.81	1709	5.70	4.62	0.81	1747	5.50	4.46	0.81	1824
32	22	6.38	4.40	0.69	1670	6.15	4.24	0.69	1776	6.00	4.14	0.69	1824	5.75	3.97	0.69	1901
32	24	6.70	3.82	0.57	1747	6.45	3.68	0.57	1843	6.30	3.59	0.57	1901	6.10	3.48	0.57	1997
32	26	6.90	3.11	0.45	1843	6.70	3.02	0.45	1939	6.60	2.97	0.45	1997	6.40	2.88	0.45	2054

PERFORMANCE DATA

COOL operation(220V)

MCF-18NV -E3 :MUCF-18NV -E3

CAPACITY : 5.0(kW) SHF : 0.67 INPUT : 1920(W)

		OUTDOOR DB(℃)															
INDOOR	INDOOR	35				40				43				46			
DB(℃)	WB(℃)	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	4.90	2.40	0.49	1882	4.50	2.21	0.49	1997	4.33	2.12	0.49	2035	4.15	2.03	0.49	2074
21	20	5.15	1.91	0.37	1958	4.80	1.78	0.37	2054	4.63	1.71	0.37	2112	4.45	1.65	0.37	2170
22	18	4.90	2.60	0.53	1882	4.50	2.39	0.53	1997	4.33	2.29	0.53	2035	4.15	2.20	0.53	2074
22	20	5.15	2.11	0.41	1958	4.80	1.97	0.41	2054	4.63	1.90	0.41	2112	4.45	1.82	0.41	2170
22	22	5.45	1.58	0.29	2035	5.10	1.48	0.29	2150	4.93	1.43	0.29	2189	4.75	1.38	0.29	2227
23	18	4.90	2.79	0.57	1882	4.50	2.57	0.57	1997	4.33	2.47	0.57	2035	4.15	2.37	0.57	2074
23	20	5.15	2.32	0.45	1958	4.80	2.16	0.45	2054	4.63	2.08	0.45	2112	4.45	2.00	0.45	2170
23	22	5.45	1.80	0.33	2035	5.10	1.68	0.33	2150	4.93	1.63	0.33	2189	4.75	1.57	0.33	2227
24	18	4.90	2.99	0.61	1882	4.50	2.75	0.61	1997	4.33	2.64	0.61	2035	4.15	2.53	0.61	2074
24	20	5.15	2.52	0.49	1958	4.80	2.35	0.49	2054	4.63	2.27	0.49	2112	4.45	2.18	0.49	2170
24	22	5.45	2.02	0.37	2035	5.10	1.89	0.37	2150	4.93	1.82	0.37	2189	4.75	1.76	0.37	2227
24	24	5.75	1.44	0.25	2112	5.40	1.35	0.25	2208	5.25	1.31	0.25	2256	5.10	1.28	0.25	2304
25	18	4.90	3.19	0.65	1882	4.50	2.93	0.65	1997	4.33	2.81	0.65	2035	4.15	2.70	0.65	2074
25	20	5.15	2.73	0.53	1958	4.80	2.54	0.53	2054	4.63	2.45	0.53	2112	4.45	2.36	0.53	2170
25	22	5.45	2.23	0.41	2035	5.10	2.09	0.41	2150	4.93	2.02	0.41	2189	4.75	1.95	0.41	2227
25	24	5.75	1.67	0.29	2112	5.40	1.57	0.29	2208	5.25	1.52	0.29	2256	5.10	1.48	0.29	2304
26	18	4.90	3.38	0.69	1882	4.50	3.11	0.69	1997	4.33	2.98	0.69	2035	4.15	2.86	0.69	2074
26	20	5.15	2.94	0.57	1958	4.80	2.74	0.57	2054	4.63	2.64	0.57	2112	4.45	2.54	0.57	2170
26	22	5.45	2.45	0.45	2035	5.10	2.30	0.45	2150	4.93	2.22	0.45	2189	4.75	2.14	0.45	2227
26	24	5.75	1.90	0.33	2112	5.40	1.78	0.33	2208	5.25	1.73	0.33	2256	5.10	1.68	0.33	2304
26	26	6.05	1.27	0.21	2189	5.70	1.20	0.21	2285	5.53	1.16	0.21	2333	5.35	1.12	0.21	2381
27	18	4.90	3.58	0.73	1882	4.50	3.29	0.73	1997	4.33	3.16	0.73	2035	4.15	3.03	0.73	2074
27	20	5.15	3.14	0.61	1958	4.80	2.93	0.61	2054	4.63	2.82	0.61	2112	4.45	2.71	0.61	2170
27	22	5.45	2.67	0.49	2035	5.10	2.50	0.49	2150	4.93	2.41	0.49	2189	4.75	2.33	0.49	2227
27	24	5.75	2.13	0.37	2112	5.40	2.00	0.37	2208	5.25	1.94	0.37	2256	5.10	1.89	0.37	2304
27	26	6.05	1.51	0.25	2189	5.70	1.43	0.25	2285	5.53	1.38	0.25	2333	5.35	1.34	0.25	2381
28	18	4.90	3.77	0.77	1882	4.50	3.47	0.77	1997	4.33	3.33	0.77	2035	4.15	3.20	0.77	2074
28	20	5.15	3.35	0.65	1958	4.80	3.12	0.65	2054	4.63	3.01	0.65	2112	4.45	2.89	0.65	2170
28	22	5.45	2.89	0.53	2035	5.10	2.70	0.53	2150	4.93	2.61	0.53	2189	4.75	2.52	0.53	2227
28	24	5.75	2.36	0.41	2112	5.40	2.21	0.41	2208	5.25	2.15	0.41	2256	5.10	2.09	0.41	2304
28	26	6.05	1.75	0.29	2189	5.70	1.65	0.29	2285	5.53	1.60	0.29	2333	5.35	1.55	0.29	2381
29	18	4.90	3.97	0.81	1882	4.50	3.65	0.81	1997	4.33	3.50	0.81	2035	4.15	3.36	0.81	2074
29	20	5.15	3.55	0.69	1958	4.80	3.31	0.69	2054	4.63	3.19	0.69	2112	4.45	3.07	0.69	2170
29	22	5.45	3.11	0.57	2035	5.10	2.91	0.57	2150	4.93	2.81	0.57	2189	4.75	2.71	0.57	2227
29	24	5.75	2.59	0.45	2112	5.40	2.43	0.45	2208	5.25	2.36	0.45	2256	5.10	2.30	0.45	2304
29	26	6.05	2.00	0.33	2189	5.70	1.88	0.33	2285	5.53	1.82	0.33	2333	5.35	1.77	0.33	2381
30	18	4.90	4.17	0.85	1882	4.50	3.83	0.85	1997	4.33	3.68	0.85	2035	4.15	3.53	0.85	2074
30	20	5.15	3.76	0.73	1958	4.80	3.50	0.73	2054	4.63	3.38	0.73	2112	4.45	3.25	0.73	2170
30	22	5.45	3.32	0.61	2035	5.10	3.11	0.61	2150	4.93	3.00	0.61	2189	4.75	2.90	0.61	2227
30	24	5.75	2.82	0.49	2112	5.40	2.65	0.49	2208	5.25	2.57	0.49	2256	5.10	2.50	0.49	2304
30	26	6.05	2.24	0.37	2189	5.70	2.11	0.37	2285	5.53	2.04	0.37	2333	5.35	1.98	0.37	2381
31	18	4.90	4.36	0.89	1882	4.50	4.01	0.89	1997	4.33	3.85	0.89	2035	4.15	3.69	0.89	2074
31	20	5.15	3.97	0.77	1958	4.80	3.70	0.77	2054	4.63	3.56	0.77	2112	4.45	3.43	0.77	2170
31	22	5.45	3.54	0.65	2035	5.10	3.32	0.65	2150	4.93	3.20	0.65	2189	4.75	3.09	0.65	2227
31	24	5.75	3.05	0.53	2112	5.40	2.86	0.53	2208	5.25	2.78	0.53	2256	5.10	2.70	0.53	2304
31	26	6.05	2.48	0.41	2189	5.70	2.34	0.41	2285	5.53	2.27	0.41	2333	5.35	2.19	0.41	2381
32	18	4.90	4.56	0.93	1882	4.50	4.19	0.93	1997	4.33	4.02	0.93	2035	4.15	3.86	0.93	2074
32	20	5.15	4.17	0.81	1958	4.80	3.89	0.81	2054	4.63	3.75	0.81	2112	4.45	3.60	0.81	2170
32	22	5.45	3.76	0.69	2035	5.10	3.52	0.69	2150	4.93	3.40	0.69	2189	4.75	3.28	0.69	2227
32	24	5.75	3.28	0.57	2112	5.40	3.08	0.57	2208	5.25	2.99	0.57	2256	5.10	2.91	0.57	2304
32	26	6.05	2.72	0.45	2189	5.70	2.57	0.45	2285	5.53	2.49	0.45	2333	5.35	2.41	0.45	2381

PERFORMANCE DATA
COOL operation(240V)
MCF-18NV -E3 :MUCF-18NV -E3

CAPACITY : 5.0(kW) SHF : 0.67 INPUT : 2010(W)

		OUTDOOR DB(℃)															
INDOOR	INDOOR	21				25				27				30			
DB(℃)	WB(℃)	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	5.88	2.88	0.49	1608	5.63	2.76	0.49	1688	5.40	2.65	0.49	1769	5.20	2.55	0.49	1849
21	20	6.13	2.27	0.37	1688	5.88	2.17	0.37	1789	5.70	2.11	0.37	1829	5.50	2.04	0.37	1910
22	18	5.88	3.11	0.53	1608	5.63	2.98	0.53	1688	5.40	2.86	0.53	1769	5.20	2.76	0.53	1849
22	20	6.13	2.51	0.41	1688	5.88	2.41	0.41	1789	5.70	2.34	0.41	1829	5.50	2.26	0.41	1910
22	22	6.38	1.85	0.29	1749	6.15	1.78	0.29	1859	6.00	1.74	0.29	1910	5.75	1.67	0.29	1990
23	18	5.88	3.35	0.57	1608	5.63	3.21	0.57	1688	5.40	3.08	0.57	1769	5.20	2.96	0.57	1849
23	20	6.13	2.76	0.45	1688	5.88	2.64	0.45	1789	5.70	2.57	0.45	1829	5.50	2.48	0.45	1910
23	22	6.38	2.10	0.33	1749	6.15	2.03	0.33	1859	6.00	1.98	0.33	1910	5.75	1.90	0.33	1990
24	18	5.88	3.58	0.61	1608	5.63	3.43	0.61	1688	5.40	3.29	0.61	1769	5.20	3.17	0.61	1849
24	20	6.13	3.00	0.49	1688	5.88	2.88	0.49	1789	5.70	2.79	0.49	1829	5.50	2.70	0.49	1910
24	22	6.38	2.36	0.37	1749	6.15	2.28	0.37	1859	6.00	2.22	0.37	1910	5.75	2.13	0.37	1990
24	24	6.70	1.68	0.25	1829	6.45	1.61	0.25	1930	6.30	1.58	0.25	1990	6.10	1.53	0.25	2090
25	18	5.88	3.82	0.65	1608	5.63	3.66	0.65	1688	5.40	3.51	0.65	1769	5.20	3.38	0.65	1849
25	20	6.13	3.25	0.53	1688	5.88	3.11	0.53	1789	5.70	3.02	0.53	1829	5.50	2.92	0.53	1910
25	22	6.38	2.61	0.41	1749	6.15	2.52	0.41	1859	6.00	2.46	0.41	1910	5.75	2.36	0.41	1990
25	24	6.70	1.94	0.29	1829	6.45	1.87	0.29	1930	6.30	1.83	0.29	1990	6.10	1.77	0.29	2090
26	18	5.88	4.05	0.69	1608	5.63	3.88	0.69	1688	5.40	3.73	0.69	1769	5.20	3.59	0.69	1849
26	20	6.13	3.49	0.57	1688	5.88	3.35	0.57	1789	5.70	3.25	0.57	1829	5.50	3.14	0.57	1910
26	22	6.38	2.87	0.45	1749	6.15	2.77	0.45	1859	6.00	2.70	0.45	1910	5.75	2.59	0.45	1990
26	24	6.70	2.21	0.33	1829	6.45	2.13	0.33	1930	6.30	2.08	0.33	1990	6.10	2.01	0.33	2090
26	26	6.90	1.45	0.21	1930	6.70	1.41	0.21	2030	6.60	1.39	0.21	2090	6.40	1.34	0.21	2151
27	18	5.88	4.29	0.73	1608	5.63	4.11	0.73	1688	5.40	3.94	0.73	1769	5.20	3.80	0.73	1849
27	20	6.13	3.74	0.61	1688	5.88	3.58	0.61	1789	5.70	3.48	0.61	1829	5.50	3.36	0.61	1910
27	22	6.38	3.12	0.49	1749	6.15	3.01	0.49	1859	6.00	2.94	0.49	1910	5.75	2.82	0.49	1990
27	24	6.70	2.48	0.37	1829	6.45	2.39	0.37	1930	6.30	2.33	0.37	1990	6.10	2.26	0.37	2090
27	26	6.90	1.73	0.25	1930	6.70	1.68	0.25	2030	6.60	1.65	0.25	2090	6.40	1.60	0.25	2151
28	18	5.88	4.52	0.77	1608	5.63	4.33	0.77	1688	5.40	4.16	0.77	1769	5.20	4.00	0.77	1849
28	20	6.13	3.98	0.65	1688	5.88	3.82	0.65	1789	5.70	3.71	0.65	1829	5.50	3.58	0.65	1910
28	22	6.38	3.38	0.53	1749	6.15	3.26	0.53	1859	6.00	3.18	0.53	1910	5.75	3.05	0.53	1990
28	24	6.70	2.75	0.41	1829	6.45	2.64	0.41	1930	6.30	2.58	0.41	1990	6.10	2.50	0.41	2090
28	26	6.90	2.00	0.29	1930	6.70	1.94	0.29	2030	6.60	1.91	0.29	2090	6.40	1.86	0.29	2151
29	18	5.88	4.76	0.81	1608	5.63	4.56	0.81	1688	5.40	4.37	0.81	1769	5.20	4.21	0.81	1849
29	20	6.13	4.23	0.69	1688	5.88	4.05	0.69	1789	5.70	3.93	0.69	1829	5.50	3.80	0.69	1910
29	22	6.38	3.63	0.57	1749	6.15	3.51	0.57	1859	6.00	3.42	0.57	1910	5.75	3.28	0.57	1990
29	24	6.70	3.02	0.45	1829	6.45	2.90	0.45	1930	6.30	2.84	0.45	1990	6.10	2.75	0.45	2090
29	26	6.90	2.28	0.33	1930	6.70	2.21	0.33	2030	6.60	2.18	0.33	2090	6.40	2.11	0.33	2151
30	18	5.88	4.99	0.85	1608	5.63	4.78	0.85	1688	5.40	4.59	0.85	1769	5.20	4.42	0.85	1849
30	20	6.13	4.47	0.73	1688	5.88	4.29	0.73	1789	5.70	4.16	0.73	1829	5.50	4.02	0.73	1910
30	22	6.38	3.89	0.61	1749	6.15	3.75	0.61	1859	6.00	3.66	0.61	1910	5.75	3.51	0.61	1990
30	24	6.70	3.28	0.49	1829	6.45	3.16	0.49	1930	6.30	3.09	0.49	1990	6.10	2.99	0.49	2090
30	26	6.90	2.55	0.37	1930	6.70	2.48	0.37	2030	6.60	2.44	0.37	2090	6.40	2.37	0.37	2151
31	18	5.88	5.23	0.89	1608	5.63	5.01	0.89	1688	5.40	4.81	0.89	1769	5.20	4.63	0.89	1849
31	20	6.13	4.72	0.77	1688	5.88	4.52	0.77	1789	5.70	4.39	0.77	1829	5.50	4.24	0.77	1910
31	22	6.38	4.14	0.65	1749	6.15	4.00	0.65	1859	6.00	3.90	0.65	1910	5.75	3.74	0.65	1990
31	24	6.70	3.55	0.53	1829	6.45	3.42	0.53	1930	6.30	3.34	0.53	1990	6.10	3.23	0.53	2090
31	26	6.90	2.83	0.41	1930	6.70	2.75	0.41	2030	6.60	2.71	0.41	2090	6.40	2.62	0.41	2151
32	18	5.88	5.46	0.93	1608	5.63	5.23	0.93	1688	5.40	5.02	0.93	1769	5.20	4.84	0.93	1849
32	20	6.13	4.96	0.81	1688	5.88	4.76	0.81	1789	5.70	4.62	0.81	1829	5.50	4.46	0.81	1910
32	22	6.38	4.40	0.69	1749	6.15	4.24	0.69	1859	6.00	4.14	0.69	1910	5.75	3.97	0.69	1990
32	24	6.70	3.82	0.57	1829	6.45	3.68	0.57	1930	6.30	3.59	0.57	1990	6.10	3.48	0.57	2090
32	26	6.90	3.11	0.45	1930	6.70	3.02	0.45	2030	6.60	2.97	0.45	2090	6.40	2.88	0.45	2151

PERFORMANCE DATA
COOL operation(240V)
MCF-18NV -E3 :MUCF-18NV -E3

CAPACITY : 5.0(kW) SHF : 0.67 INPUT : 2010(W)

		OUTDOOR DB(℃)															
INDOOR	INDOOR	35				40				43				46			
DB(℃)	WB(℃)	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	4.90	2.40	0.49	1970	4.50	2.21	0.49	2090	4.33	2.12	0.49	2131	4.15	2.03	0.49	2171
21	20	5.15	1.91	0.37	2050	4.80	1.78	0.37	2151	4.63	1.71	0.37	2211	4.45	1.65	0.37	2271
22	18	4.90	2.60	0.53	1970	4.50	2.39	0.53	2090	4.33	2.29	0.53	2131	4.15	2.20	0.53	2171
22	20	5.15	2.11	0.41	2050	4.80	1.97	0.41	2151	4.63	1.90	0.41	2211	4.45	1.82	0.41	2271
22	22	5.45	1.58	0.29	2131	5.10	1.48	0.29	2251	4.93	1.43	0.29	2291	4.75	1.38	0.29	2332
23	18	4.90	2.79	0.57	1970	4.50	2.57	0.57	2090	4.33	2.47	0.57	2131	4.15	2.37	0.57	2171
23	20	5.15	2.32	0.45	2050	4.80	2.16	0.45	2151	4.63	2.08	0.45	2211	4.45	2.00	0.45	2271
23	22	5.45	1.80	0.33	2131	5.10	1.68	0.33	2251	4.93	1.63	0.33	2291	4.75	1.57	0.33	2332
24	18	4.90	2.99	0.61	1970	4.50	2.75	0.61	2090	4.33	2.64	0.61	2131	4.15	2.53	0.61	2171
24	20	5.15	2.52	0.49	2050	4.80	2.35	0.49	2151	4.63	2.27	0.49	2211	4.45	2.18	0.49	2271
24	22	5.45	2.02	0.37	2131	5.10	1.89	0.37	2251	4.93	1.82	0.37	2291	4.75	1.76	0.37	2332
24	24	5.75	1.44	0.25	2211	5.40	1.35	0.25	2312	5.25	1.31	0.25	2362	5.10	1.28	0.25	2412
25	18	4.90	3.19	0.65	1970	4.50	2.93	0.65	2090	4.33	2.81	0.65	2131	4.15	2.70	0.65	2171
25	20	5.15	2.73	0.53	2050	4.80	2.54	0.53	2151	4.63	2.45	0.53	2211	4.45	2.36	0.53	2271
25	22	5.45	2.23	0.41	2131	5.10	2.09	0.41	2251	4.93	2.02	0.41	2291	4.75	1.95	0.41	2332
25	24	5.75	1.67	0.29	2211	5.40	1.57	0.29	2312	5.25	1.52	0.29	2362	5.10	1.48	0.29	2412
26	18	4.90	3.38	0.69	1970	4.50	3.11	0.69	2090	4.33	2.98	0.69	2131	4.15	2.86	0.69	2171
26	20	5.15	2.94	0.57	2050	4.80	2.74	0.57	2151	4.63	2.64	0.57	2211	4.45	2.54	0.57	2271
26	22	5.45	2.45	0.45	2131	5.10	2.30	0.45	2251	4.93	2.22	0.45	2291	4.75	2.14	0.45	2332
26	24	5.75	1.90	0.33	2211	5.40	1.78	0.33	2312	5.25	1.73	0.33	2362	5.10	1.68	0.33	2412
26	26	6.05	1.27	0.21	2291	5.70	1.20	0.21	2392	5.53	1.16	0.21	2442	5.35	1.12	0.21	2492
27	18	4.90	3.58	0.73	1970	4.50	3.29	0.73	2090	4.33	3.16	0.73	2131	4.15	3.03	0.73	2171
27	20	5.15	3.14	0.61	2050	4.80	2.93	0.61	2151	4.63	2.82	0.61	2211	4.45	2.71	0.61	2271
27	22	5.45	2.67	0.49	2131	5.10	2.50	0.49	2251	4.93	2.41	0.49	2291	4.75	2.33	0.49	2332
27	24	5.75	2.13	0.37	2211	5.40	2.00	0.37	2312	5.25	1.94	0.37	2362	5.10	1.89	0.37	2412
27	26	6.05	1.51	0.25	2291	5.70	1.43	0.25	2392	5.53	1.38	0.25	2442	5.35	1.34	0.25	2492
28	18	4.90	3.77	0.77	1970	4.50	3.47	0.77	2090	4.33	3.33	0.77	2131	4.15	3.20	0.77	2171
28	20	5.15	3.35	0.65	2050	4.80	3.12	0.65	2151	4.63	3.01	0.65	2211	4.45	2.89	0.65	2271
28	22	5.45	2.89	0.53	2131	5.10	2.70	0.53	2251	4.93	2.61	0.53	2291	4.75	2.52	0.53	2332
28	24	5.75	2.36	0.41	2211	5.40	2.21	0.41	2312	5.25	2.15	0.41	2362	5.10	2.09	0.41	2412
28	26	6.05	1.75	0.29	2291	5.70	1.65	0.29	2392	5.53	1.60	0.29	2442	5.35	1.55	0.29	2492
29	18	4.90	3.97	0.81	1970	4.50	3.65	0.81	2090	4.33	3.50	0.81	2131	4.15	3.36	0.81	2171
29	20	5.15	3.55	0.69	2050	4.80	3.31	0.69	2151	4.63	3.19	0.69	2211	4.45	3.07	0.69	2271
29	22	5.45	3.11	0.57	2131	5.10	2.91	0.57	2251	4.93	2.81	0.57	2291	4.75	2.71	0.57	2332
29	24	5.75	2.59	0.45	2211	5.40	2.43	0.45	2312	5.25	2.36	0.45	2362	5.10	2.30	0.45	2412
29	26	6.05	2.00	0.33	2291	5.70	1.88	0.33	2392	5.53	1.82	0.33	2442	5.35	1.77	0.33	2492
30	18	4.90	4.17	0.85	1970	4.50	3.83	0.85	2090	4.33	3.68	0.85	2131	4.15	3.53	0.85	2171
30	20	5.15	3.76	0.73	2050	4.80	3.50	0.73	2151	4.63	3.38	0.73	2211	4.45	3.25	0.73	2271
30	22	5.45	3.32	0.61	2131	5.10	3.11	0.61	2251	4.93	3.00	0.61	2291	4.75	2.90	0.61	2332
30	24	5.75	2.82	0.49	2211	5.40	2.65	0.49	2312	5.25	2.57	0.49	2362	5.10	2.50	0.49	2412
30	26	6.05	2.24	0.37	2291	5.70	2.11	0.37	2392	5.53	2.04	0.37	2442	5.35	1.98	0.37	2492
31	18	4.90	4.36	0.89	1970	4.50	4.01	0.89	2090	4.33	3.85	0.89	2131	4.15	3.69	0.89	2171
31	20	5.15	3.97	0.77	2050	4.80	3.70	0.77	2151	4.63	3.56	0.77	2211	4.45	3.43	0.77	2271
31	22	5.45	3.54	0.65	2131	5.10	3.32	0.65	2251	4.93	3.20	0.65	2291	4.75	3.09	0.65	2332
31	24	5.75	3.05	0.53	2211	5.40	2.86	0.53	2312	5.25	2.78	0.53	2362	5.10	2.70	0.53	2412
31	26	6.05	2.48	0.41	2291	5.70	2.34	0.41	2392	5.53	2.27	0.41	2442	5.35	2.19	0.41	2492
32	18	4.90	4.56	0.93	1970	4.50	4.19	0.93	2090	4.33	4.02	0.93	2131	4.15	3.86	0.93	2171
32	20	5.15	4.17	0.81	2050	4.80	3.89	0.81	2151	4.63	3.75	0.81	2211	4.45	3.60	0.81	2271
32	22	5.45	3.76	0.69	2131	5.10	3.52	0.69	2251	4.93	3.40	0.69	2291	4.75	3.28	0.69	2332
32	24	5.75	3.28	0.57	2211	5.40	3.08	0.57	2312	5.25	2.99	0.57	2362	5.10	2.91	0.57	2412
32	26	6.05	2.72	0.45	2291	5.70	2.57	0.45	2392	5.53	2.49	0.45	2442	5.35	2.41	0.45	2492

PERFORMANCE DATA
COOL operation(220V)
MCF-24NV -E3 :MUCF-24NV -E3

CAPACITY : 6.4(kW) SHF : 0.63 INPUT : 2870(W)

		OUTDOOR DB(℃)															
INDOOR	INDOOR	21				25				27				30			
DB(℃)	WB(℃)	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	7.52	3.38	0.45	2296	7.20	3.24	0.45	2411	6.91	3.11	0.45	2526	6.66	3.00	0.45	2640
21	20	7.84	2.59	0.33	2411	7.52	2.48	0.33	2554	7.30	2.41	0.33	2612	7.04	2.32	0.33	2727
22	18	7.52	3.68	0.49	2296	7.20	3.53	0.49	2411	6.91	3.39	0.49	2526	6.66	3.26	0.49	2640
22	20	7.84	2.90	0.37	2411	7.52	2.78	0.37	2554	7.30	2.70	0.37	2612	7.04	2.60	0.37	2727
22	22	8.16	2.04	0.25	2497	7.87	1.97	0.25	2655	7.68	1.92	0.25	2727	7.36	1.84	0.25	2841
23	18	7.52	3.99	0.53	2296	7.20	3.82	0.53	2411	6.91	3.66	0.53	2526	6.66	3.53	0.53	2640
23	20	7.84	3.21	0.41	2411	7.52	3.08	0.41	2554	7.30	2.99	0.41	2612	7.04	2.89	0.41	2727
23	22	8.16	2.37	0.29	2497	7.87	2.28	0.29	2655	7.68	2.23	0.29	2727	7.36	2.13	0.29	2841
24	18	7.52	4.29	0.57	2296	7.20	4.10	0.57	2411	6.91	3.94	0.57	2526	6.66	3.79	0.57	2640
24	20	7.84	3.53	0.45	2411	7.52	3.38	0.45	2554	7.30	3.28	0.45	2612	7.04	3.17	0.45	2727
24	22	8.16	2.69	0.33	2497	7.87	2.60	0.33	2655	7.68	2.53	0.33	2727	7.36	2.43	0.33	2841
24	24	8.58	1.80	0.21	2612	8.26	1.73	0.21	2755	8.06	1.69	0.21	2841	7.81	1.64	0.21	2985
25	18	7.52	4.59	0.61	2296	7.20	4.39	0.61	2411	6.91	4.22	0.61	2526	6.66	4.06	0.61	2640
25	20	7.84	3.84	0.49	2411	7.52	3.68	0.49	2554	7.30	3.58	0.49	2612	7.04	3.45	0.49	2727
25	22	8.16	3.02	0.37	2497	7.87	2.91	0.37	2655	7.68	2.84	0.37	2727	7.36	2.72	0.37	2841
25	24	8.58	2.14	0.25	2612	8.26	2.06	0.25	2755	8.06	2.02	0.25	2841	7.81	1.95	0.25	2985
26	18	7.52	4.89	0.65	2296	7.20	4.68	0.65	2411	6.91	4.49	0.65	2526	6.66	4.33	0.65	2640
26	20	7.84	4.16	0.53	2411	7.52	3.99	0.53	2554	7.30	3.87	0.53	2612	7.04	3.73	0.53	2727
26	22	8.16	3.35	0.41	2497	7.87	3.23	0.41	2655	7.68	3.15	0.41	2727	7.36	3.02	0.41	2841
26	24	8.58	2.49	0.29	2612	8.26	2.39	0.29	2755	8.06	2.34	0.29	2841	7.81	2.26	0.29	2985
26	26	8.83	1.50	0.17	2755	8.58	1.46	0.17	2899	8.45	1.44	0.17	2985	8.19	1.39	0.17	3071
27	18	7.52	5.19	0.69	2296	7.20	4.97	0.69	2411	6.91	4.77	0.69	2526	6.66	4.59	0.69	2640
27	20	7.84	4.47	0.57	2411	7.52	4.29	0.57	2554	7.30	4.16	0.57	2612	7.04	4.01	0.57	2727
27	22	8.16	3.67	0.45	2497	7.87	3.54	0.45	2655	7.68	3.46	0.45	2727	7.36	3.31	0.45	2841
27	24	8.58	2.83	0.33	2612	8.26	2.72	0.33	2755	8.06	2.66	0.33	2841	7.81	2.58	0.33	2985
27	26	8.83	1.85	0.21	2755	8.58	1.80	0.21	2899	8.45	1.77	0.21	2985	8.19	1.72	0.21	3071
28	18	7.52	5.49	0.73	2296	7.20	5.26	0.73	2411	6.91	5.05	0.73	2526	6.66	4.86	0.73	2640
28	20	7.84	4.78	0.61	2411	7.52	4.59	0.61	2554	7.30	4.45	0.61	2612	7.04	4.29	0.61	2727
28	22	8.16	4.00	0.49	2497	7.87	3.86	0.49	2655	7.68	3.76	0.49	2727	7.36	3.61	0.49	2841
28	24	8.58	3.17	0.37	2612	8.26	3.05	0.37	2755	8.06	2.98	0.37	2841	7.81	2.89	0.37	2985
28	26	8.83	2.21	0.25	2755	8.58	2.14	0.25	2899	8.45	2.11	0.25	2985	8.19	2.05	0.25	3071
29	18	7.52	5.79	0.77	2296	7.20	5.54	0.77	2411	6.91	5.32	0.77	2526	6.66	5.13	0.77	2640
29	20	7.84	5.10	0.65	2411	7.52	4.89	0.65	2554	7.30	4.74	0.65	2612	7.04	4.58	0.65	2727
29	22	8.16	4.32	0.53	2497	7.87	4.17	0.53	2655	7.68	4.07	0.53	2727	7.36	3.90	0.53	2841
29	24	8.58	3.52	0.41	2612	8.26	3.38	0.41	2755	8.06	3.31	0.41	2841	7.81	3.20	0.41	2985
29	26	8.83	2.56	0.29	2755	8.58	2.49	0.29	2899	8.45	2.45	0.29	2985	8.19	2.38	0.29	3071
30	18	7.52	6.09	0.81	2296	7.20	5.83	0.81	2411	6.91	5.60	0.81	2526	6.66	5.39	0.81	2640
30	20	7.84	5.41	0.69	2411	7.52	5.19	0.69	2554	7.30	5.03	0.69	2612	7.04	4.86	0.69	2727
30	22	8.16	4.65	0.57	2497	7.87	4.49	0.57	2655	7.68	4.38	0.57	2727	7.36	4.20	0.57	2841
30	24	8.58	3.86	0.45	2612	8.26	3.72	0.45	2755	8.06	3.63	0.45	2841	7.81	3.51	0.45	2985
30	26	8.83	2.91	0.33	2755	8.58	2.83	0.33	2899	8.45	2.79	0.33	2985	8.19	2.70	0.33	3071
31	18	7.52	6.39	0.85	2296	7.20	6.12	0.85	2411	6.91	5.88	0.85	2526	6.66	5.66	0.85	2640
31	20	7.84	5.72	0.73	2411	7.52	5.49	0.73	2554	7.30	5.33	0.73	2612	7.04	5.14	0.73	2727
31	22	8.16	4.98	0.61	2497	7.87	4.80	0.61	2655	7.68	4.68	0.61	2727	7.36	4.49	0.61	2841
31	24	8.58	4.20	0.49	2612	8.26	4.05	0.49	2755	8.06	3.95	0.49	2841	7.81	3.83	0.49	2985
31	26	8.83	3.27	0.37	2755	8.58	3.17	0.37	2899	8.45	3.13	0.37	2985	8.19	3.03	0.37	3071
32	18	7.52	6.69	0.89	2296	7.20	6.41	0.89	2411	6.91	6.15	0.89	2526	6.66	5.92	0.89	2640
32	20	7.84	6.04	0.77	2411	7.52	5.79	0.77	2554	7.30	5.62	0.77	2612	7.04	5.42	0.77	2727
32	22	8.16	5.30	0.65	2497	7.87	5.12	0.65	2655	7.68	4.99	0.65	2727	7.36	4.78	0.65	2841
32	24	8.58	4.55	0.53	2612	8.26	4.38	0.53	2755	8.06	4.27	0.53	2841	7.81	4.14	0.53	2985
32	26	8.83	3.62	0.41	2755	8.58	3.52	0.41	2899	8.45	3.46	0.41	2985	8.19	3.36	0.41	3071

PERFORMANCE DATA

COOL operation(220V)

MCF-24NV -E3 :MUCF-24NV -E3

CAPACITY : 6.4(kW) SHF : 0.63 INPUT : 2870(W)

		OUTDOOR DB(℃)															
INDOOR	INDOOR	35				40				43				46			
DB(℃)	WB(℃)	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	6.27	2.82	0.45	2813	5.76	2.59	0.45	2985	5.54	2.49	0.45	3042	5.31	2.39	0.45	3100
21	20	6.59	2.18	0.33	2927	6.14	2.03	0.33	3071	5.92	1.95	0.33	3157	5.70	1.88	0.33	3243
22	18	6.27	3.07	0.49	2813	5.76	2.82	0.49	2985	5.54	2.71	0.49	3042	5.31	2.60	0.49	3100
22	20	6.59	2.44	0.37	2927	6.14	2.27	0.37	3071	5.92	2.19	0.37	3157	5.70	2.11	0.37	3243
22	22	6.98	1.74	0.25	3042	6.53	1.63	0.25	3214	6.30	1.58	0.25	3272	6.08	1.52	0.25	3329
23	18	6.27	3.32	0.53	2813	5.76	3.05	0.53	2985	5.54	2.93	0.53	3042	5.31	2.82	0.53	3100
23	20	6.59	2.70	0.41	2927	6.14	2.52	0.41	3071	5.92	2.43	0.41	3157	5.70	2.34	0.41	3243
23	22	6.98	2.02	0.29	3042	6.53	1.89	0.29	3214	6.30	1.83	0.29	3272	6.08	1.76	0.29	3329
24	18	6.27	3.58	0.57	2813	5.76	3.28	0.57	2985	5.54	3.16	0.57	3042	5.31	3.03	0.57	3100
24	20	6.59	2.97	0.45	2927	6.14	2.76	0.45	3071	5.92	2.66	0.45	3157	5.70	2.56	0.45	3243
24	22	6.98	2.30	0.33	3042	6.53	2.15	0.33	3214	6.30	2.08	0.33	3272	6.08	2.01	0.33	3329
24	24	7.36	1.55	0.21	3157	6.91	1.45	0.21	3301	6.72	1.41	0.21	3372	6.53	1.37	0.21	3444
25	18	6.27	3.83	0.61	2813	5.76	3.51	0.61	2985	5.54	3.38	0.61	3042	5.31	3.24	0.61	3100
25	20	6.59	3.23	0.49	2927	6.14	3.01	0.49	3071	5.92	2.90	0.49	3157	5.70	2.79	0.49	3243
25	22	6.98	2.58	0.37	3042	6.53	2.42	0.37	3214	6.30	2.33	0.37	3272	6.08	2.25	0.37	3329
25	24	7.36	1.84	0.25	3157	6.91	1.73	0.25	3301	6.72	1.68	0.25	3372	6.53	1.63	0.25	3444
26	18	6.27	4.08	0.65	2813	5.76	3.74	0.65	2985	5.54	3.60	0.65	3042	5.31	3.45	0.65	3100
26	20	6.59	3.49	0.53	2927	6.14	3.26	0.53	3071	5.92	3.14	0.53	3157	5.70	3.02	0.53	3243
26	22	6.98	2.86	0.41	3042	6.53	2.68	0.41	3214	6.30	2.58	0.41	3272	6.08	2.49	0.41	3329
26	24	7.36	2.13	0.29	3157	6.91	2.00	0.29	3301	6.72	1.95	0.29	3372	6.53	1.89	0.29	3444
26	26	7.74	1.32	0.17	3272	7.30	1.24	0.17	3415	7.07	1.20	0.17	3487	6.85	1.16	0.17	3559
27	18	6.27	4.33	0.69	2813	5.76	3.97	0.69	2985	5.54	3.82	0.69	3042	5.31	3.67	0.69	3100
27	20	6.59	3.76	0.57	2927	6.14	3.50	0.57	3071	5.92	3.37	0.57	3157	5.70	3.25	0.57	3243
27	22	6.98	3.14	0.45	3042	6.53	2.94	0.45	3214	6.30	2.84	0.45	3272	6.08	2.74	0.45	3329
27	24	7.36	2.43	0.33	3157	6.91	2.28	0.33	3301	6.72	2.22	0.33	3372	6.53	2.15	0.33	3444
27	26	7.74	1.63	0.21	3272	7.30	1.53	0.21	3415	7.07	1.49	0.21	3487	6.85	1.44	0.21	3559
28	18	6.27	4.58	0.73	2813	5.76	4.20	0.73	2985	5.54	4.04	0.73	3042	5.31	3.88	0.73	3100
28	20	6.59	4.02	0.61	2927	6.14	3.75	0.61	3071	5.92	3.61	0.61	3157	5.70	3.47	0.61	3243
28	22	6.98	3.42	0.49	3042	6.53	3.20	0.49	3214	6.30	3.09	0.49	3272	6.08	2.98	0.49	3329
28	24	7.36	2.72	0.37	3157	6.91	2.56	0.37	3301	6.72	2.49	0.37	3372	6.53	2.42	0.37	3444
28	26	7.74	1.94	0.25	3272	7.30	1.82	0.25	3415	7.07	1.77	0.25	3487	6.85	1.71	0.25	3559
29	18	6.27	4.83	0.77	2813	5.76	4.44	0.77	2985	5.54	4.26	0.77	3042	5.31	4.09	0.77	3100
29	20	6.59	4.28	0.65	2927	6.14	3.99	0.65	3071	5.92	3.85	0.65	3157	5.70	3.70	0.65	3243
29	22	6.98	3.70	0.53	3042	6.53	3.46	0.53	3214	6.30	3.34	0.53	3272	6.08	3.22	0.53	3329
29	24	7.36	3.02	0.41	3157	6.91	2.83	0.41	3301	6.72	2.76	0.41	3372	6.53	2.68	0.41	3444
29	26	7.74	2.25	0.29	3272	7.30	2.12	0.29	3415	7.07	2.05	0.29	3487	6.85	1.99	0.29	3559
30	18	6.27	5.08	0.81	2813	5.76	4.67	0.81	2985	5.54	4.48	0.81	3042	5.31	4.30	0.81	3100
30	20	6.59	4.55	0.69	2927	6.14	4.24	0.69	3071	5.92	4.08	0.69	3157	5.70	3.93	0.69	3243
30	22	6.98	3.98	0.57	3042	6.53	3.72	0.57	3214	6.30	3.59	0.57	3272	6.08	3.47	0.57	3329
30	24	7.36	3.31	0.45	3157	6.91	3.11	0.45	3301	6.72	3.02	0.45	3372	6.53	2.94	0.45	3444
30	26	7.74	2.56	0.33	3272	7.30	2.41	0.33	3415	7.07	2.33	0.33	3487	6.85	2.26	0.33	3559
31	18	6.27	5.33	0.85	2813	5.76	4.90	0.85	2985	5.54	4.71	0.85	3042	5.31	4.52	0.85	3100
31	20	6.59	4.81	0.73	2927	6.14	4.49	0.73	3071	5.92	4.32	0.73	3157	5.70	4.16	0.73	3243
31	22	6.98	4.26	0.61	3042	6.53	3.98	0.61	3214	6.30	3.85	0.61	3272	6.08	3.71	0.61	3329
31	24	7.36	3.61	0.49	3157	6.91	3.39	0.49	3301	6.72	3.29	0.49	3372	6.53	3.20	0.49	3444
31	26	7.74	2.87	0.37	3272	7.30	2.70	0.37	3415	7.07	2.62	0.37	3487	6.85	2.53	0.37	3559
32	18	6.27	5.58	0.89	2813	5.76	5.13	0.89	2985	5.54	4.93	0.89	3042	5.31	4.73	0.89	3100
32	20	6.59	5.08	0.77	2927	6.14	4.73	0.77	3071	5.92	4.56	0.77	3157	5.70	4.39	0.77	3243
32	22	6.98	4.53	0.65	3042	6.53	4.24	0.65	3214	6.30	4.10	0.65	3272	6.08	3.95	0.65	3329
32	24	7.36	3.90	0.53	3157	6.91	3.66	0.53	3301	6.72	3.56	0.53	3372	6.53	3.46	0.53	3444
32	26	7.74	3.18	0.41	3272	7.30	2.99	0.41	3415	7.07	2.90	0.41	3487	6.85	2.81	0.41	3559

PERFORMANCE DATA

COOL operation(240V)

MCF-24NV -E3 :MUCF-24NV -E3

CAPACITY : 6.4(kW) SHF : 0.63 INPUT : 2970(W)

		OUTDOOR DB(℃)															
INDOOR	INDOOR	21				25				27				30			
DB(℃)	WB(℃)	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	7.52	3.38	0.45	2376	7.20	3.24	0.45	2495	6.91	3.11	0.45	2614	6.66	3.00	0.45	2732
21	20	7.84	2.59	0.33	2495	7.52	2.48	0.33	2643	7.30	2.41	0.33	2703	7.04	2.32	0.33	2822
22	18	7.52	3.68	0.49	2376	7.20	3.53	0.49	2495	6.91	3.39	0.49	2614	6.66	3.26	0.49	2732
22	20	7.84	2.90	0.37	2495	7.52	2.78	0.37	2643	7.30	2.70	0.37	2703	7.04	2.60	0.37	2822
22	22	8.16	2.04	0.25	2584	7.87	1.97	0.25	2747	7.68	1.92	0.25	2822	7.36	1.84	0.25	2940
23	18	7.52	3.99	0.53	2376	7.20	3.82	0.53	2495	6.91	3.66	0.53	2614	6.66	3.53	0.53	2732
23	20	7.84	3.21	0.41	2495	7.52	3.08	0.41	2643	7.30	2.99	0.41	2703	7.04	2.89	0.41	2822
23	22	8.16	2.37	0.29	2584	7.87	2.28	0.29	2747	7.68	2.23	0.29	2822	7.36	2.13	0.29	2940
24	18	7.52	4.29	0.57	2376	7.20	4.10	0.57	2495	6.91	3.94	0.57	2614	6.66	3.79	0.57	2732
24	20	7.84	3.53	0.45	2495	7.52	3.38	0.45	2643	7.30	3.28	0.45	2703	7.04	3.17	0.45	2822
24	22	8.16	2.69	0.33	2584	7.87	2.60	0.33	2747	7.68	2.53	0.33	2822	7.36	2.43	0.33	2940
24	24	8.58	1.80	0.21	2703	8.26	1.73	0.21	2851	8.06	1.69	0.21	2940	7.81	1.64	0.21	3089
25	18	7.52	4.59	0.61	2376	7.20	4.39	0.61	2495	6.91	4.22	0.61	2614	6.66	4.06	0.61	2732
25	20	7.84	3.84	0.49	2495	7.52	3.68	0.49	2643	7.30	3.58	0.49	2703	7.04	3.45	0.49	2822
25	22	8.16	3.02	0.37	2584	7.87	2.91	0.37	2747	7.68	2.84	0.37	2822	7.36	2.72	0.37	2940
25	24	8.58	2.14	0.25	2703	8.26	2.06	0.25	2851	8.06	2.02	0.25	2940	7.81	1.95	0.25	3089
26	18	7.52	4.89	0.65	2376	7.20	4.68	0.65	2495	6.91	4.49	0.65	2614	6.66	4.33	0.65	2732
26	20	7.84	4.16	0.53	2495	7.52	3.99	0.53	2643	7.30	3.87	0.53	2703	7.04	3.73	0.53	2822
26	22	8.16	3.35	0.41	2584	7.87	3.23	0.41	2747	7.68	3.15	0.41	2822	7.36	3.02	0.41	2940
26	24	8.58	2.49	0.29	2703	8.26	2.39	0.29	2851	8.06	2.34	0.29	2940	7.81	2.26	0.29	3089
26	26	8.83	1.50	0.17	2851	8.58	1.46	0.17	3000	8.45	1.44	0.17	3089	8.19	1.39	0.17	3178
27	18	7.52	5.19	0.69	2376	7.20	4.97	0.69	2495	6.91	4.77	0.69	2614	6.66	4.59	0.69	2732
27	20	7.84	4.47	0.57	2495	7.52	4.29	0.57	2643	7.30	4.16	0.57	2703	7.04	4.01	0.57	2822
27	22	8.16	3.67	0.45	2584	7.87	3.54	0.45	2747	7.68	3.46	0.45	2822	7.36	3.31	0.45	2940
27	24	8.58	2.83	0.33	2703	8.26	2.72	0.33	2851	8.06	2.66	0.33	2940	7.81	2.58	0.33	3089
27	26	8.83	1.85	0.21	2851	8.58	1.80	0.21	3000	8.45	1.77	0.21	3089	8.19	1.72	0.21	3178
28	18	7.52	5.49	0.73	2376	7.20	5.26	0.73	2495	6.91	5.05	0.73	2614	6.66	4.86	0.73	2732
28	20	7.84	4.78	0.61	2495	7.52	4.59	0.61	2643	7.30	4.45	0.61	2703	7.04	4.29	0.61	2822
28	22	8.16	4.00	0.49	2584	7.87	3.86	0.49	2747	7.68	3.76	0.49	2822	7.36	3.61	0.49	2940
28	24	8.58	3.17	0.37	2703	8.26	3.05	0.37	2851	8.06	2.98	0.37	2940	7.81	2.89	0.37	3089
28	26	8.83	2.21	0.25	2851	8.58	2.14	0.25	3000	8.45	2.11	0.25	3089	8.19	2.05	0.25	3178
29	18	7.52	5.79	0.77	2376	7.20	5.54	0.77	2495	6.91	5.32	0.77	2614	6.66	5.13	0.77	2732
29	20	7.84	5.10	0.65	2495	7.52	4.89	0.65	2643	7.30	4.74	0.65	2703	7.04	4.58	0.65	2822
29	22	8.16	4.32	0.53	2584	7.87	4.17	0.53	2747	7.68	4.07	0.53	2822	7.36	3.90	0.53	2940
29	24	8.58	3.52	0.41	2703	8.26	3.38	0.41	2851	8.06	3.31	0.41	2940	7.81	3.20	0.41	3089
29	26	8.83	2.56	0.29	2851	8.58	2.49	0.29	3000	8.45	2.45	0.29	3089	8.19	2.38	0.29	3178
30	18	7.52	6.09	0.81	2376	7.20	5.83	0.81	2495	6.91	5.60	0.81	2614	6.66	5.39	0.81	2732
30	20	7.84	5.41	0.69	2495	7.52	5.19	0.69	2643	7.30	5.03	0.69	2703	7.04	4.86	0.69	2822
30	22	8.16	4.65	0.57	2584	7.87	4.49	0.57	2747	7.68	4.38	0.57	2822	7.36	4.20	0.57	2940
30	24	8.58	3.86	0.45	2703	8.26	3.72	0.45	2851	8.06	3.63	0.45	2940	7.81	3.51	0.45	3089
30	26	8.83	2.91	0.33	2851	8.58	2.83	0.33	3000	8.45	2.79	0.33	3089	8.19	2.70	0.33	3178
31	18	7.52	6.39	0.85	2376	7.20	6.12	0.85	2495	6.91	5.88	0.85	2614	6.66	5.66	0.85	2732
31	20	7.84	5.72	0.73	2495	7.52	5.49	0.73	2643	7.30	5.33	0.73	2703	7.04	5.14	0.73	2822
31	22	8.16	4.98	0.61	2584	7.87	4.80	0.61	2747	7.68	4.68	0.61	2822	7.36	4.49	0.61	2940
31	24	8.58	4.20	0.49	2703	8.26	4.05	0.49	2851	8.06	3.95	0.49	2940	7.81	3.83	0.49	3089
31	26	8.83	3.27	0.37	2851	8.58	3.17	0.37	3000	8.45	3.13	0.37	3089	8.19	3.03	0.37	3178
32	18	7.52	6.69	0.89	2376	7.20	6.41	0.89	2495	6.91	6.15	0.89	2614	6.66	5.92	0.89	2732
32	20	7.84	6.04	0.77	2495	7.52	5.79	0.77	2643	7.30	5.62	0.77	2703	7.04	5.42	0.77	2822
32	22	8.16	5.30	0.65	2584	7.87	5.12	0.65	2747	7.68	4.99	0.65	2822	7.36	4.78	0.65	2940
32	24	8.58	4.55	0.53	2703	8.26	4.38	0.53	2851	8.06	4.27	0.53	2940	7.81	4.14	0.53	3089
32	26	8.83	3.62	0.41	2851	8.58	3.52	0.41	3000	8.45	3.46	0.41	3089	8.19	3.36	0.41	3178

PERFORMANCE DATA
COOL operation(240V)
MCF-24NV -E3 :MUCF-24NV -E3

CAPACITY : 6.4(kW) SHF : 0.63 INPUT : 2970(W)

		OUTDOOR DB(℃)															
INDOOR	INDOOR	35				40				43				46			
DB(℃)	WB(℃)	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	6.27	2.82	0.45	2911	5.76	2.59	0.45	3089	5.54	2.49	0.45	3148	5.31	2.39	0.45	3208
21	20	6.59	2.18	0.33	3029	6.14	2.03	0.33	3178	5.92	1.95	0.33	3267	5.70	1.88	0.33	3356
22	18	6.27	3.07	0.49	2911	5.76	2.82	0.49	3089	5.54	2.71	0.49	3148	5.31	2.60	0.49	3208
22	20	6.59	2.44	0.37	3029	6.14	2.27	0.37	3178	5.92	2.19	0.37	3267	5.70	2.11	0.37	3356
22	22	6.98	1.74	0.25	3148	6.53	1.63	0.25	3326	6.30	1.58	0.25	3386	6.08	1.52	0.25	3445
23	18	6.27	3.32	0.53	2911	5.76	3.05	0.53	3089	5.54	2.93	0.53	3148	5.31	2.82	0.53	3208
23	20	6.59	2.70	0.41	3029	6.14	2.52	0.41	3178	5.92	2.43	0.41	3267	5.70	2.34	0.41	3356
23	22	6.98	2.02	0.29	3148	6.53	1.89	0.29	3326	6.30	1.83	0.29	3386	6.08	1.76	0.29	3445
24	18	6.27	3.58	0.57	2911	5.76	3.28	0.57	3089	5.54	3.16	0.57	3148	5.31	3.03	0.57	3208
24	20	6.59	2.97	0.45	3029	6.14	2.76	0.45	3178	5.92	2.66	0.45	3267	5.70	2.56	0.45	3356
24	22	6.98	2.30	0.33	3148	6.53	2.15	0.33	3326	6.30	2.08	0.33	3386	6.08	2.01	0.33	3445
24	24	7.36	1.55	0.21	3267	6.91	1.45	0.21	3416	6.72	1.41	0.21	3490	6.53	1.37	0.21	3564
25	18	6.27	3.83	0.61	2911	5.76	3.51	0.61	3089	5.54	3.38	0.61	3148	5.31	3.24	0.61	3208
25	20	6.59	3.23	0.49	3029	6.14	3.01	0.49	3178	5.92	2.90	0.49	3267	5.70	2.79	0.49	3356
25	22	6.98	2.58	0.37	3148	6.53	2.42	0.37	3326	6.30	2.33	0.37	3386	6.08	2.25	0.37	3445
25	24	7.36	1.84	0.25	3267	6.91	1.73	0.25	3416	6.72	1.68	0.25	3490	6.53	1.63	0.25	3564
26	18	6.27	4.08	0.65	2911	5.76	3.74	0.65	3089	5.54	3.60	0.65	3148	5.31	3.45	0.65	3208
26	20	6.59	3.49	0.53	3029	6.14	3.26	0.53	3178	5.92	3.14	0.53	3267	5.70	3.02	0.53	3356
26	22	6.98	2.86	0.41	3148	6.53	2.68	0.41	3326	6.30	2.58	0.41	3386	6.08	2.49	0.41	3445
26	24	7.36	2.13	0.29	3267	6.91	2.00	0.29	3416	6.72	1.95	0.29	3490	6.53	1.89	0.29	3564
26	26	7.74	1.32	0.17	3386	7.30	1.24	0.17	3534	7.07	1.20	0.17	3609	6.85	1.16	0.17	3683
27	18	6.27	4.33	0.69	2911	5.76	3.97	0.69	3089	5.54	3.82	0.69	3148	5.31	3.67	0.69	3208
27	20	6.59	3.76	0.57	3029	6.14	3.50	0.57	3178	5.92	3.37	0.57	3267	5.70	3.25	0.57	3356
27	22	6.98	3.14	0.45	3148	6.53	2.94	0.45	3326	6.30	2.84	0.45	3386	6.08	2.74	0.45	3445
27	24	7.36	2.43	0.33	3267	6.91	2.28	0.33	3416	6.72	2.22	0.33	3490	6.53	2.15	0.33	3564
27	26	7.74	1.63	0.21	3386	7.30	1.53	0.21	3534	7.07	1.49	0.21	3609	6.85	1.44	0.21	3683
28	18	6.27	4.58	0.73	2911	5.76	4.20	0.73	3089	5.54	4.04	0.73	3148	5.31	3.88	0.73	3208
28	20	6.59	4.02	0.61	3029	6.14	3.75	0.61	3178	5.92	3.61	0.61	3267	5.70	3.47	0.61	3356
28	22	6.98	3.42	0.49	3148	6.53	3.20	0.49	3326	6.30	3.09	0.49	3386	6.08	2.98	0.49	3445
28	24	7.36	2.72	0.37	3267	6.91	2.56	0.37	3416	6.72	2.49	0.37	3490	6.53	2.42	0.37	3564
28	26	7.74	1.94	0.25	3386	7.30	1.82	0.25	3534	7.07	1.77	0.25	3609	6.85	1.71	0.25	3683
29	18	6.27	4.83	0.77	2911	5.76	4.44	0.77	3089	5.54	4.26	0.77	3148	5.31	4.09	0.77	3208
29	20	6.59	4.28	0.65	3029	6.14	3.99	0.65	3178	5.92	3.85	0.65	3267	5.70	3.70	0.65	3356
29	22	6.98	3.70	0.53	3148	6.53	3.46	0.53	3326	6.30	3.34	0.53	3386	6.08	3.22	0.53	3445
29	24	7.36	3.02	0.41	3267	6.91	2.83	0.41	3416	6.72	2.76	0.41	3490	6.53	2.68	0.41	3564
29	26	7.74	2.25	0.29	3386	7.30	2.12	0.29	3534	7.07	2.05	0.29	3609	6.85	1.99	0.29	3683
30	18	6.27	5.08	0.81	2911	5.76	4.67	0.81	3089	5.54	4.48	0.81	3148	5.31	4.30	0.81	3208
30	20	6.59	4.55	0.69	3029	6.14	4.24	0.69	3178	5.92	4.08	0.69	3267	5.70	3.93	0.69	3356
30	22	6.98	3.98	0.57	3148	6.53	3.72	0.57	3326	6.30	3.59	0.57	3386	6.08	3.47	0.57	3445
30	24	7.36	3.31	0.45	3267	6.91	3.11	0.45	3416	6.72	3.02	0.45	3490	6.53	2.94	0.45	3564
30	26	7.74	2.56	0.33	3386	7.30	2.41	0.33	3534	7.07	2.33	0.33	3609	6.85	2.26	0.33	3683
31	18	6.27	5.33	0.85	2911	5.76	4.90	0.85	3089	5.54	4.71	0.85	3148	5.31	4.52	0.85	3208
31	20	6.59	4.81	0.73	3029	6.14	4.49	0.73	3178	5.92	4.32	0.73	3267	5.70	4.16	0.73	3356
31	22	6.98	4.26	0.61	3148	6.53	3.98	0.61	3326	6.30	3.85	0.61	3386	6.08	3.71	0.61	3445
31	24	7.36	3.61	0.49	3267	6.91	3.39	0.49	3416	6.72	3.29	0.49	3490	6.53	3.20	0.49	3564
31	26	7.74	2.87	0.37	3386	7.30	2.70	0.37	3534	7.07	2.62	0.37	3609	6.85	2.53	0.37	3683
32	18	6.27	5.58	0.89	2911	5.76	5.13	0.89	3089	5.54	4.93	0.89	3148	5.31	4.73	0.89	3208
32	20	6.59	5.08	0.77	3029	6.14	4.73	0.77	3178	5.92	4.56	0.77	3267	5.70	4.39	0.77	3356
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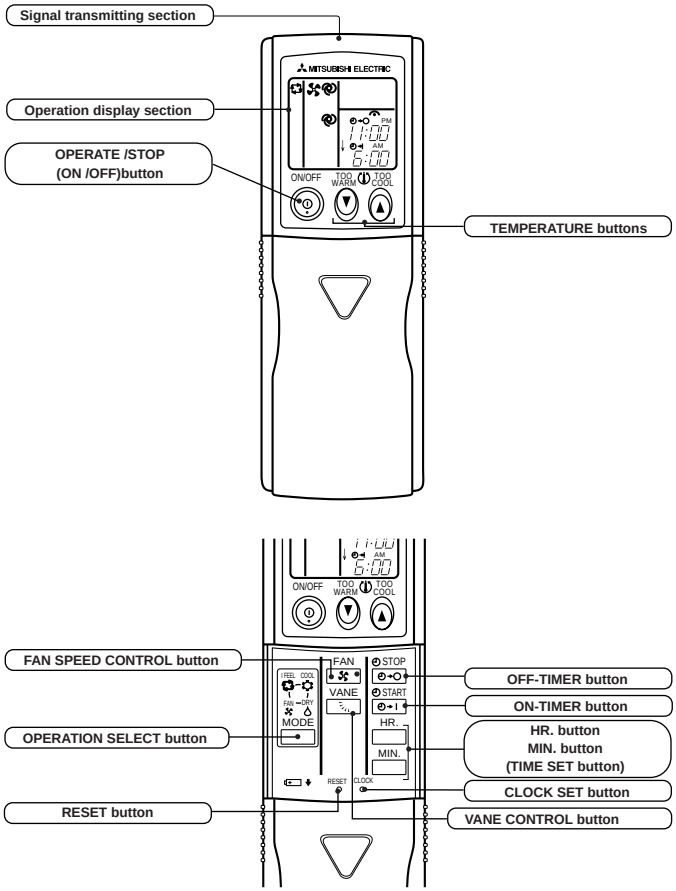
32	24	7.36	3.90	0.53	3267	6.91	3.66	0.53	3416	6.72	3.56	0.53	3490	6.53	3.46	0.53	3564
32	26	7.74	3.18	0.41	3386	7.30	2.99	0.41	3534	7.07	2.90	0.41	3609	6.85	2.81	0.41	3683

9 MICROPROCESSOR CONTROL

MCF-13NV - E4 MCF-18NV - E3 MUCF-13NV - E4 MUCF-18NV - E3
MCF-24NV - E3 MUCF-24NV - E3

WIRELESS REMOTE CONTROLLER



INDOOR UNIT DISPLAY SECTION

Operation indicator

Indication	Operation state	Difference between set temperatuer and room temperature
☀ ☀	This shows that the air conditioner is operating to reach the target temperature. Please wait until the target temperature is obtained.	About 2 degrees (℃) or more
☀ □	This shows that the room temperature is approaching the target temperature.	About 2 degrees (℃) or less

Once the operation mode are set, the same operation mode can be repeated by simply turning the OPERATE/STOP (ON/OFF) button ON.
Indoor unit receives the signal with a beep tone.
When the system turns off, 3-minute time delay will operate to protect system from overload and compressor will not restart for 3 minutes.

9-1. "I FEEL CONTROL" (▭)OPERATION

(1) Press OPERATE/STOP button on the remote controller. Power monitor lamp of the indoor unit will turn on with a beep tone.
(2) Select "I FEEL CONTROL"(▭)mode with the OPERATION SELECT button.
(3) The operation mode is determined by the room temperature at start-up of the operation.

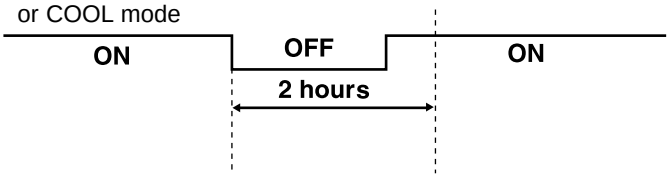
Initial room temperature	mode
more than 25°C	COOL mode of "I FEEL CONTROL"
13.0°C to 25°C	DRY mode of "I FEEL CONTROL"

- Once the mode is fixed, the mode will not change by room temperature afterwards.
- Under the ON-TIMER (◷→|)timer operation, the mode is determined according to the room temperature when the operation starts.
- When the system is stopped with the OPERATE/ STOP button on the remote controller, and restarted within 2 hours in "I FEEL CONTROL" (▭)mode, the system operates in previous mode automatically regardless of the room temperature.

Example

Previous operation
COOL mode of "I FEEL CONTROL" or COOL mode

Restart
COOL mode of "I FEEL CONTROL"

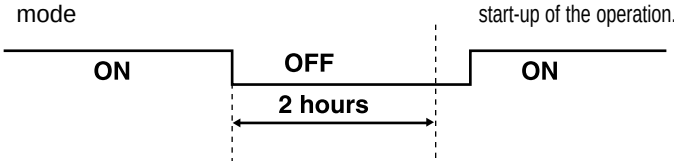


- When the system is restarted after 2 hours, the operation mode is determined by the initial room temperature at start-up of the operation.

Example

Previous operation
COOL mode of "I FEEL CONTROL" or COOL mode

Restart
COOL or DRY mode of "I FEEL CONTROL" that is determined by initial room temperature at start-up of the operation.



(4) The initial set temperature is decided by the initial room temperature.

Model	Initial room temperature	Initial set temperature	
COOL mode of "I FEEL CONTROL"	26°C or more	24°C	✵1
	25°C to 26°C	Initial room temperature minus 2°C	
DRY mode of "I FEEL CONTROL"	13°C to 25°C	Initial room temperature minus 2°C	

✵1 When the system is restarted with the remote controller, the system operates with the previous set temperature regardless of the room temperature at restart.
The set temperature is calculated by the previous set temperature.

(5) TEMPERATURES buttons
In "I FEEL CONTROL"(▭) mode, set temperature is decided by the microprocessor based on the room temperature.
In addition, set temperature is controlled by or TOO WARM or TOO COOL buttons when you feel too warm or too cool.
Each time the TOO WARM or TOO COOL button is pressed, the indoor unit receives the signal and emits a beep tone.

● **Fuzzy control**

When the TOO COOL or TOO WARM button is pressed, the microprocessor changes the set temperature, considering the room temperature, the frequency of pressing TOO COOL or TOO WARM button and the user's preference to heat or cold. So this is called "Fuzzy control", and works only in "I FEEL CONTROL" mode.
In DRY mode of "I FEEL CONTROL", the set temperature doesn't change.

TOO COOL ··· To raise the set temperature 1~2 degrees(°C)

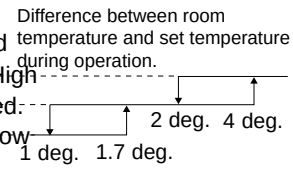
TOO WARM ··· To lower the set temperature 1~2 degrees(°C)

— COOL mode of "I FEEL CONTROL" —

1. Indoor fan speed control

Indoor fan operates at the set speed by FAN SPEED CONTROL button.
In AUTO the fan speed is as follows.

Initial temperature difference	Fan speed
Room temperature minus set temperature : 2 degrees or more	High
Room temperature minus set temperature : Between 1 and 2 degrees	Med.
Room temperature minus set temperature : less than 1 degrees	Low



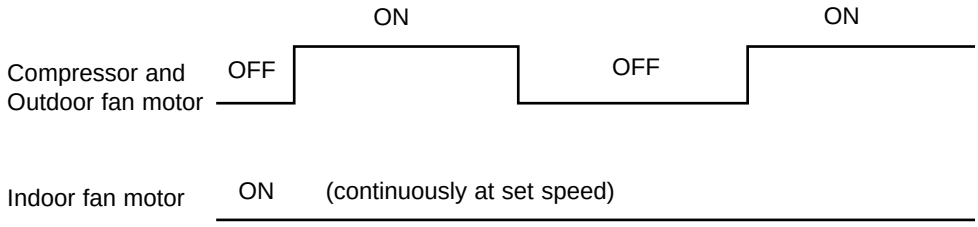
2. Coil frost prevention

① Temperature control

When the indoor coil thermistor RT12 reads -1℃ or below, the coil frost prevention mode starts immediately. However the coil frost prevention doesn't work for 5 minutes since the compressor has started.
The indoor fan operates at the set speed the compressor stops for 5 minutes.
After that, if RT12 still reads below -1℃ this mode is prolonged until the RT12 reads over -1℃.

② Time control

When the three conditions as follows have been satisfied for 1 hour and 45 minutes, compressor stops for 3 minutes.
a. Compressor has been continuously operating.
b. Indoor fan speed is Low or Med..
c. Room temperature is below 26℃.
When compressor stops, the accumulated time is cancelled and when compressor restarts, time counting starts from the beginning.
Time counting also stops temporarily when the indoor fan speed becomes High or the room temperature exceeds 26℃. However, when two of the above conditions (b.and c.) are satisfied again. Time accumulation is resumed.



—DRY mode of "I FEEL CONTROL"—

The system for dry operation uses the same refrigerant circuit as the cooling circuit.
The compressor and the indoor fan are controlled by the temperature.
By such controls, indoor flow amounts will be reduced in order to lower humidity without much room temperature decrease.

1. Indoor fan speed control

Indoor fan operates at the set speed by FAN SPEED CONTROL button.
However, in AUTO fan operation, fan speed becomes Low.

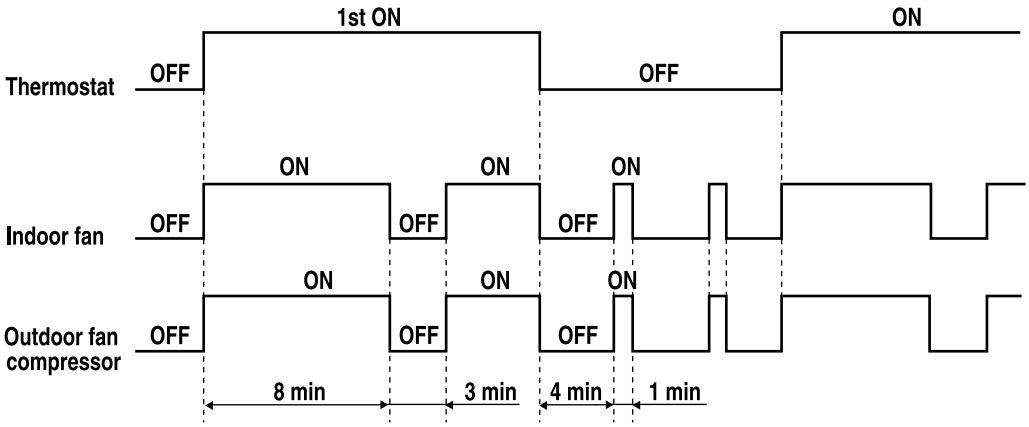
2. The operation of the compressor and indoor/ outdoor fan

Compressor operates by room temperature control and time control.
Set temperature is controlled to fall 2℃ as initial set temperature.
Indoor fan and outdoor fan operate in the same cycle as the compressor.

- When the room temperature is 23℃ or over:
  When the thermostat is ON, the compressor repeats 8 minutes ON and 3 minutes OFF.
  When the thermostat is OFF, the compressor repeats 4 minutes OFF and 1 minute ON.
- When the room temperature is under 23℃.
  When the thermostat is ON, the compressor repeats 2 minutes ON and 3 minutes OFF.
  When the thermostat is OFF, the compressor repeats 4 minutes OFF and 1 minute ON.

Operation time chart

Example



3. Coil frost prevention

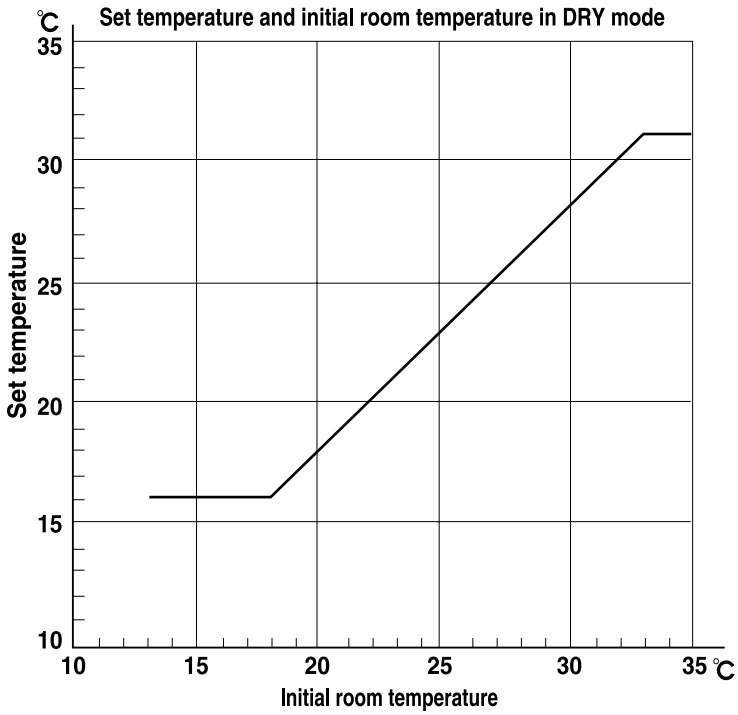
- The operation is as same as coil frost prevention during COOL mode of "I FEEL CONTROL".
- Indoor fan operates at the set speed and the compressor stops for 5 minutes, because protection (Coil frost prevention) has the priority.
  However, when coil frost prevention works while the compressor is not operating, it's speed becomes Low.

9-2. COOL (✪) OPERATION

(1) Press OPERATE/STOP button.
Power monitor lamp of the indoor unit turns on with a beep tone.
(2) Select COOL mode.
(3) Set the desired temperature with the TEMPERATURES button.
(TOO WARM or TOO COOL button)
The setting range is 16 ~ 31°C
✻ Indoor fan continues to operate regardless of thermostat's OFF-ON
✻ Coil frost prevention is same as COOL mode of "I FEEL CONTROL"

9-3. DRY (△) OPERATION

(1) Press OPERATE/STOP button.
Power monitor lamp of the indoor unit turns on with a beep tone.
(2) Select DRY mode.
(3) The microprocessor reads the room temperature and determines the set temperature. Set temperature is as shown in the right chart.
Thermostat (SET TEMP.)does not work.
The other operations are same as DRY mode of "I FEEL CONTROL".
(4) DRY operation will not work when the room temperature is 13°C or below.

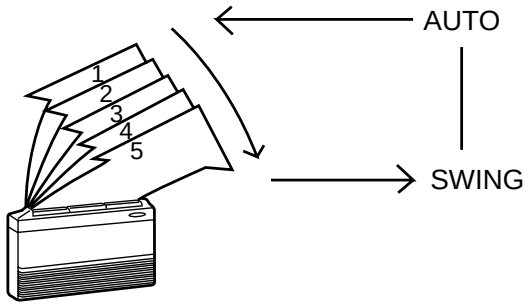


9-4. FAN (✣) OPERATION

(1) Press the OPERATE/STOP (ON/OFF) button.
(2) Select FAN mode with the OPERATION SELECT button.
(3) Select the desired fan speed.When AUTO,it becomes Low.
Only indoor fan operates.
Outdoor unit does not operate.

9-5. AUTO VANE OPERATION

(1) Vane motor drive
This series is equipped with a stepping motor for the vane. The rotating direction, speed, and angle of the motor are controlled by pulse signals (approx. 12V, transmitted from indoor microprocessor.)
(2) Each time the VANE CONTROL button is pressed, angle of horizontal vane is changed in sequence, from 1, 2, 3, 4, 5, SWING to AUTO.

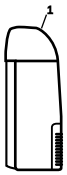


(3) Positioning
The vane is once pressed to the vane stopper to confirm the standard position and then set to the desired angle.
The positioning is decided as follows.
(a) When the OPERATE/STOP button is pressed (POWER ON/OFF).
(b) When the vane control is changed from AUTO to MANUAL.
(c) When the SWING is finished.
(d) When the test run starts.
(e) When the power supply turns ON.

(4) VANE AUTO (@) mode

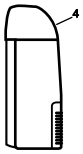
In VANE AUTO mode, the microprocessor automatically determines the vane angle and operation to make the optimum room-temperature distribution.

1.In COOL and DRY operation

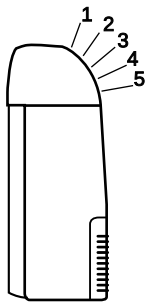


Vane angle is fixed to position 1.

2.In FAN operation



Vane angle is fixed to position 4.



(5) Dew prevention

During COOL or DRY operation at position 4 or 5 when the compressor cumulative operation time exceeds 1 hour, the angle of horizontal vane automatically changes to position 1 for dew prevention.

(6) SWING MODE(↭)

By selecting SWING mode with the VANE CONTROL button the horizontal vane swings vertically. The remote controller displays " ↭".SWING mode is cancelled when the VANE CONTROL button is pressed once again.

(7) STOP and ON-TIMER standby

When the following cases occur, the vane returns to the closed position.

(a) When the operation is stopped by the remote controller.

(b) When the operation is stopped by the emergency operation.

(c) When the ON-timer is on standby.

9-6. TIMER OPERATION

1. How to set the timer

(1) Press OPERATE/STOP button to start the air conditioner.

(2) Check that the current time is set correctly.

NOTE : Timer operation will not work without setting the current time. Initially "AM0:00" blinks at the current time display of TIME MONITOR, so set the current time correctly with CLOCK SET button.

(3) Press ON-TIMER, OFF-TIMER button to select the operation.

"◴ START" button ... AUTO START operation (ON timer)

"◴ STOP" button ... AUTO STOP operation (OFF timer)

(4) Press HR. and MIN. button to set the timer. Time setting is 10-minute units.

HR. and MIN. button will work when "◴ START" or "◴ STOP" button is flashing on and off.

These marks disappear in 1 minute.

When setting the ON timer, check that Power monitor lamp of the indoor unit lights.

NOTE 1 : Be sure to place the remote controller at the position where its signal can reach the air conditioner even during TIMER operation, or the set time may deviate within the range of about 10 minutes.

NOTE2 : Reset the timer in the following cases, or the set time may deviate and other malfunctions may occur.

- A power failure occurs.
- The circuit breaker functions.

2. Cancel

Timer setting can be cancelled with the TIMER CONTROL buttons. ("◴ START" or "◴ STOP")

To cancel the ON timer, press the "◴ START" button.

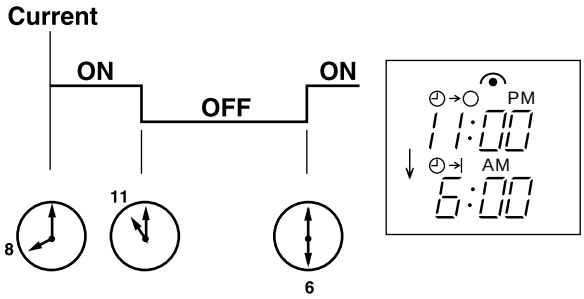
To cancel the OFF timer, press the "◴ STOP" button.

Timer is cancelled and the display of set time disappears.

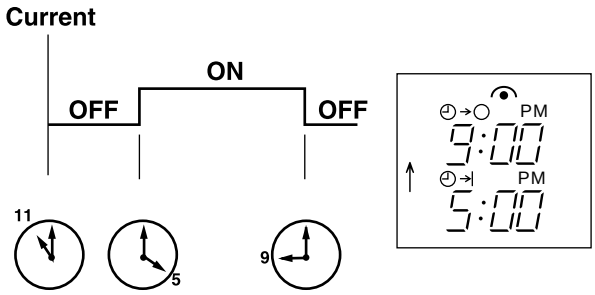
PROGRAM TIMER

● The OFF timer and ON timer can be used in combination.
● "↓" and "↑" display show the order of the OFF timer and ON timer operation.

(Example 1) The current timer is 8:00 PM.
The unit turns off at 11:00 PM, and on at 6:00 AM.



(Example 2) The current time is 11:00 AM.
The unit turns on at 5:00 PM, and off at 9:00 PM.

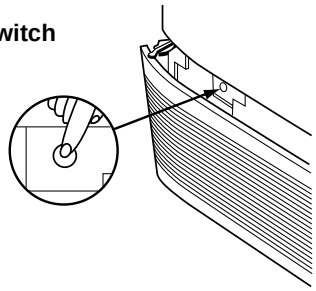


9-7. EMERGENCY-TEST OPERATION

When the remote controller is missing, has failed or the batteries run down, press the EMERGENCY OPERATION switch on the front of the indoor unit. The unit will start and the Power monitor lamp will light.
The first 30 minutes of operation will be the test run operation. This operation is for servicing. The indoor fan runs at high speed and the system is in continuous operation. The thermostat is ON and the timer is reset to normal.
After 30 minutes of test run operation the system shifts to EMERGENCY COOL MODE with a set temperature of 24˚C in cooling. The fan shifts to Med. speed.
This operation continues until the EMERGENCY OPERATION switch is pressed or a button on the remote controller is pressed, then normal operation will start.
The coil frost prevention circuit operates in this mode.

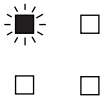
NOTE : Do not press the EMERGENCY OPERATION switch during normal operation.

EMERGENCY OPERATION switch



Operation indicator

Press once <Cool>
Press again <Stop>



9-8. AUTO RESTART FUNCTION

When the indoor unit is controlled with the remote controller, the operation mode, set temperature, and the fan speed are memorized by the auto restart P.C. board.
The "AUTO RESTART" function sets to work the moment the power has restored after power failure. Then, the unit will restart automatically. However if the unit is operatioed in "I FEEL CONTROL" mode, before power failure, the operation is not memorized. In "I FEEL CONTROL" mode, the operation is decided by the initial room temperature.

NOTE :

- •The operation settings are memorized when 10 seconds have passed after the remote controller was operated.
- •If the main power is turned off or a power failure occurs while AUTO START/ STOP timer is active, the timer setting is cancelled.
- •If the unit has been off with the remote controller before power failure, the auto restart function does not work as the power button of the remote controller is off.
- •To prevent breaker off due to the rush of starting current, systematize other home appliances not to tum on at the same time.
- •When some air conditioners are connected to the same supply system, if they are operated before power failure, the starting current of all the compressors may flow simultaneously at restart.
  Therefore, the special counter-measures are required to prevent the main voltage-drop or the rush of the starting corrent by adding to the system that allows the units to start one by one.

10 SERVICE FUNCTIONS

MCF-13NV -E4 MCF-24NV -E3 MUCF-13NV -E4 MUCF-24NV -E3
MCF-18NV -E3 MUCF-18NV -E3

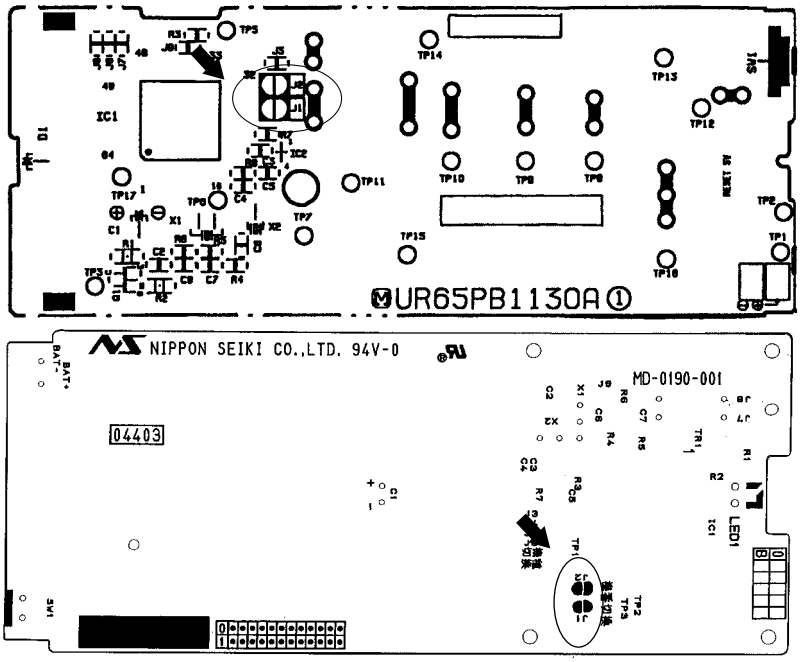
10-1. TIMER SHORT MODE

For service, set time can be shortened by short circuit of JPG and JPS on the electronic control P.C. board.
The time will be shortened as follows.(Refer to page 40.)
3-minute time delay : 3-minute → 3-second
AUTO START : 1 hour → 1-minute
AUTO STOP : 1 hour → 1-minute

10-2. P.C. BOARD MODIFICATION FOR INDIVIDUAL OPERATION

A maximum of 4 indoor units with wireless remote controllers can be used in a room. In this case, to operate each indoor unit individually by each remote controller, P.C. boards of remote controller must be modified according to the indoor unit number.

How to modify the remote controller P.C. board
Remove batteries before modification.
The board has a print as shown below :



NOTE : For remodelling, take out the batteries and press the OPERATE/STOP(ON/OFF)button twice or 3 times at first.
After finish remodelling, put back the batteries then press the RESET button.

The P.C. board has the print “J1” and “J2”. Solder “J1” and “J2” according to the number of indoor unit as shown in Table 1.
After modification, press the RESET button.

NOTE : Fore remodeling, take out the batteries at first.
After finish remodeling, put back the batteries then push the RESET-button.

The P.C. board has the print “J1” and “J2”. Jumper wires are mounted to each “J1” and “J2”. Cut J1 and J2 according to the number of indoor unit as shown in Table 1.
After modification, push the RESET button near the MIN.button on the remote controller.

Table1.

	1 unit operation	2 unit operation	3 unit operation	4 unit operation
No.1 unit	No modification	Same as at left	Same as at left	Same as at left
No.2 unit	————	Cut J1	Same as at left	Same as at left
No.3 unit	————	————	Cut J2	Same as at left
No.4 unit	————	————	————	Cut both J1 and J2

NOTE : At power supply failure or installation, indoor unit deletes the memory about remote controller. When the power supply is turned on and indoor unit receives the first signals from the remote controller, the remote controller number is designated as the indoor unit number. Therefore at and after the second time indoor unit accepts the remote controller of the initial setting number.
At setting - error, turn the power supply off to cancel the individual operation and then turn the power supply on to restart the setting.

10-3. RELEASE OF AUTO RESTART FUNCTION

Solder JHA (refer to page 40) with a jumper line on the indoor electronic control P.C. board.
Remove the auto restart assy from “Connector CN104”.

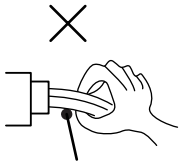
11 TROUBLESHOOTING

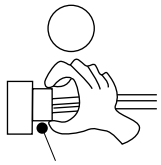
MCF-13NV -E4 MUCF-13NV -E4
MCF-18NV -E3 MUCF-18NV -E3
MCF-24NV -E3 MUCF-24NV -E3

11-1. CAUTIONS ON TROUBLESHOOTING

11-1-1. Before troubleshooting, check the followings:
1) Check the power supply voltage.
2) Check the indoor/outdoor connecting wire for mis-wiring.

11-1-2. Take care the followings during servicing.
1) Be sure to unplug the power cord before removing the air inlet grille, the front panel, the cabinet, the top panel, and the electronic control P.C. boards.
2) When removing the electronic control P.C. board, hold the edge of the board with care NOT to apply stress on the components.
3) When connecting or disconnecting the connectors, hold the housing of the connector. DO NOT pull the lead wires.

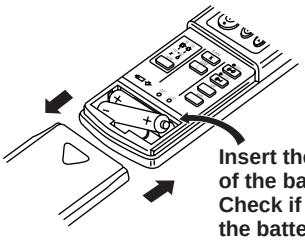

Lead wiring


Housing point

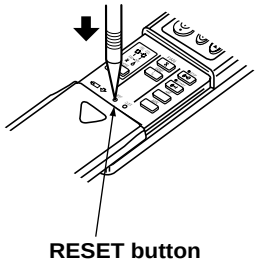
11-1-3. Troubleshooting procedure
1) First, check if the Power monitor lamp on the indoor unit is flashing on and off to indicate an abnormality. To make sure, check the abnormality indication for 2 times before starting service work.
2) Before servicing check that the connectors and terminals are connected properly.
3) If the electronic control P.C. board is supposed to be defective, check the copper foil pattern for disconnection and the components for bursting and discoloration.
3) When troubleshooting, refer to the flow chart and the check table on page 36.

11-1-4. How to replace batteries
Weak batteries may cause the remote controller malfunction.
In this case, replace the batteries to operate the remote controller normally.

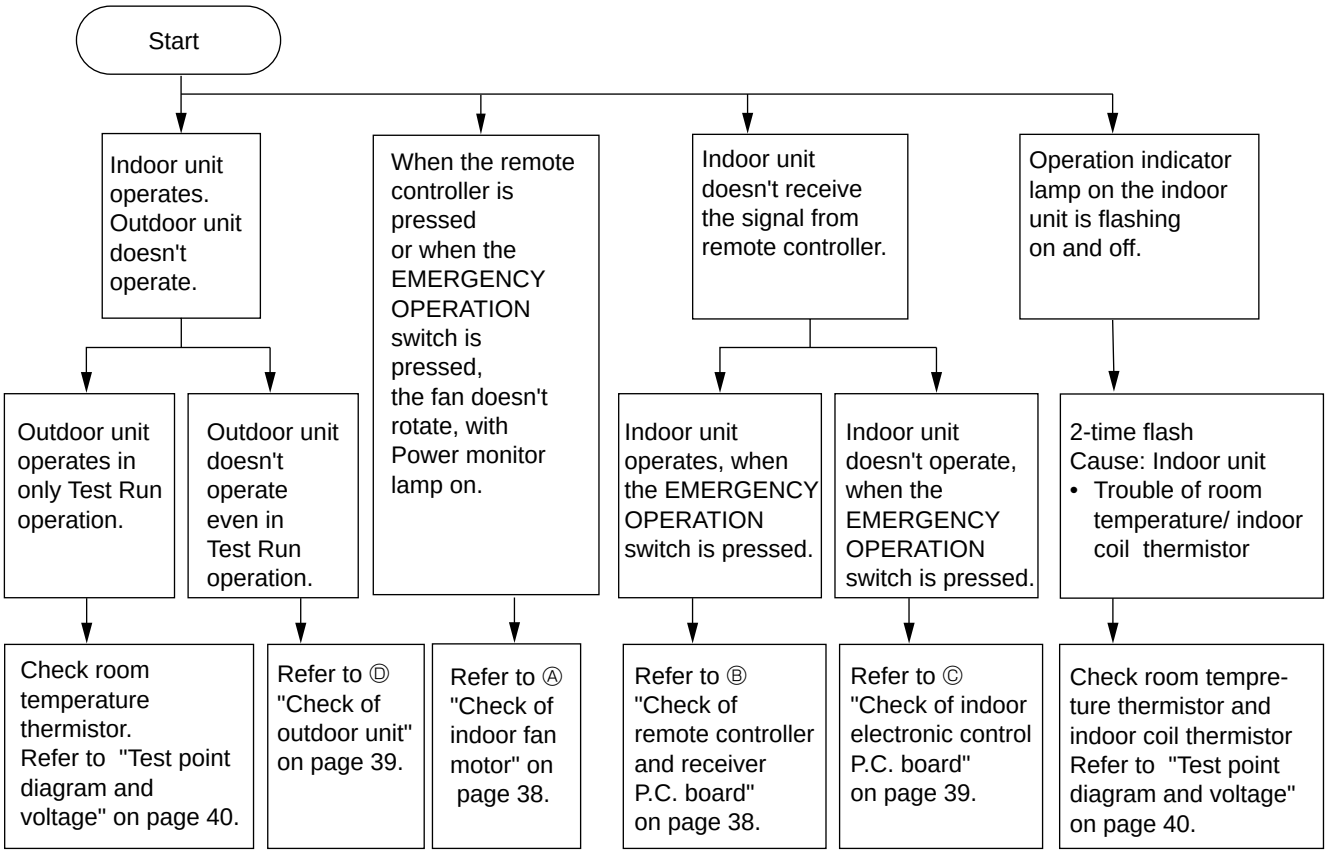
① Remove the front lid and insert batteries.
Then reattach the front lid.


Insert the negative pole of the batteries first. Check if the polarity of the battereis is correct.

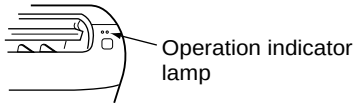
② Press the RESET button with tip end of ball point pen or the like, and then use the remote controller.


RESET button

11-2. Instruction of troubleshooting


Start
Indoor unit operates. Outdoor unit doesn't operate.
When the remote controller is pressed or when the EMERGENCY OPERATION switch is pressed, the fan doesn't rotate, with Power monitor lamp on.
Indoor unit doesn't receive the signal from remote controller.
Operation indicator lamp on the indoor unit is flashing on and off.
Outdoor unit operates in only Test Run operation.
Outdoor unit doesn't operate even in Test Run operation.
Indoor unit operates, when the EMERGENCY OPERATION switch is pressed.
Indoor unit doesn't operate, when the EMERGENCY OPERATION switch is pressed.
2-time flash
Cause: Indoor unit
• Trouble of room temperature/ indoor coil thermistor
Check room temperature thermistor. Refer to "Test point diagram and voltage" on page 40.
Refer to Ⓓ "Check of outdoor unit" on page 39.
Refer to Ⓐ "Check of indoor fan motor" on page 38.
Refer to Ⓑ "Check of remote controller and receiver P.C. board" on page 38.
Refer to Ⓒ "Check of indoor electronic control P.C. board" on page 39.
Check room tempre-ture thermistor and indoor coil thermistor Refer to "Test point diagram and voltage" on page 40.

11-2-1. Troubleshooting check table

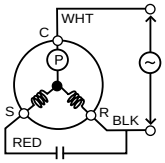
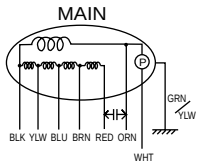
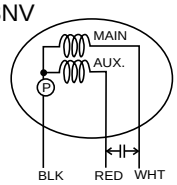


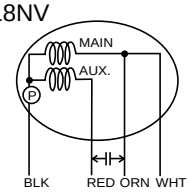
❋ Before taking measures, make sure that the symptom reappears, for accurate troubleshooting.
Self check table

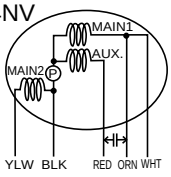
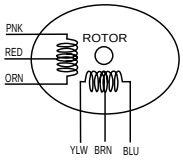
NO.	Abnormal point	Indication	Symptom	Detect method	Check point
1	Indoor coil thermistor Room tempera-ture ther-mistor	2-time flash ●○●○○○○○●○●○○○ 2.5-second OFF	Outdoor unit does not run.	Detect Indoor coil/room tem-perature thermistor short or open circuit.	● Check resistance of thermistor. ● Reconnect connector ● Check indoor electronic control P.C. board

11-2-2. Trouble criterion of main parts

MCF-13NV -E4, MCF-18NV -E3 MUCF-13NV -E4, MUCF-18NV -E3
MCF-24NV -E3 MUCF-24NV -E3

<table>
<tr><th>Part name</th><th>Check method and criterion</th><th>Figure</th></tr>
<tr><td>Room temperature thermistor (RT11)
Indoor coil thermistor (RT12)</td><td>Measure the resistance with a tester.
(Part temperature 10°C ~ 30°C)
<table><tr><th>Normal</th><th>Abnormal</th></tr><tr><td>8kΩ ~ 20kΩ</td><td>Opened or short-circuited</td></tr></table></td><td></td></tr>
<tr><td>Compressor (MC)</td><td>Measure the resistance between the terminals with a tester.
(Part wiring temperature -10°C ~ 40°C)
<table><tr><th rowspan="2"></th><th colspan="3">Normal</th><th rowspan="2">Abnormal</th></tr><tr><th>13NV</th><th>18NV</th><th>24NV</th></tr><tr><td>C-R</td><td>1.86~2.28Ω</td><td>1.05~1.30Ω</td><td>0.84~1.04Ω</td><td>Opened or short-circuited</td></tr><tr><td>C-S</td><td>3.50~4.29Ω</td><td>2.38~2.92Ω</td><td>1.82~2.24Ω</td><td></td></tr></table></td><td> 
</td></tr>
<tr><td>Indoor fan motor (MF)</td><td>Measure the resistance between the terminals with a tester.
(Part wiring temperature10°C ~ 30°C)
<table><tr><th rowspan="2"></th><th colspan="3">Normal</th><th rowspan="2">Abnormal</th></tr><tr><th>13NV</th><th>18NV</th><th>24NV</th></tr><tr><td>WHT-BLK</td><td>195~212Ω</td><td>175~190Ω</td><td>79~87Ω</td><td rowspan="5">Opened or short-circuited</td></tr><tr><td>BLK-YLW</td><td>44~48Ω</td><td>66~72Ω</td><td>63~69Ω</td></tr><tr><td>YLW-BLU</td><td>31~34Ω</td><td>45~50Ω</td><td>34~38Ω</td></tr><tr><td>BLU-BRN</td><td>42~47Ω</td><td>30~33Ω</td><td>25~29Ω</td></tr><tr><td>BRN-RED</td><td>22~25Ω</td><td>22~24Ω</td><td>13~15Ω</td></tr></table></td><td>13/18/24NV
 
</td></tr>
<tr><td>Outdoor fan motor (MF)</td><td>Measure the resistance between the terminals with a tester.
(Part wiring temperature -10°C ~ 40°C)
<table><tr><th rowspan="2"></th><th colspan="3">Normal</th><th rowspan="2">Abnormal</th></tr><tr><th>13NV</th><th>18NV</th><th>24NV</th></tr><tr><td>WHT-BLK</td><td>155 ~ 190Ω</td><td>102 ~ 126Ω</td><td>71 ~ 88Ω</td><td rowspan="3">Opened or short-circuited</td></tr><tr><td>BLK-RED</td><td>364 ~ 446Ω</td><td>97 ~ 120Ω</td><td>90 ~ 111Ω</td></tr><tr><td>BLK-YLW</td><td>—</td><td>—</td><td>81~ 100Ω</td></tr></table></td><td>13NV
 

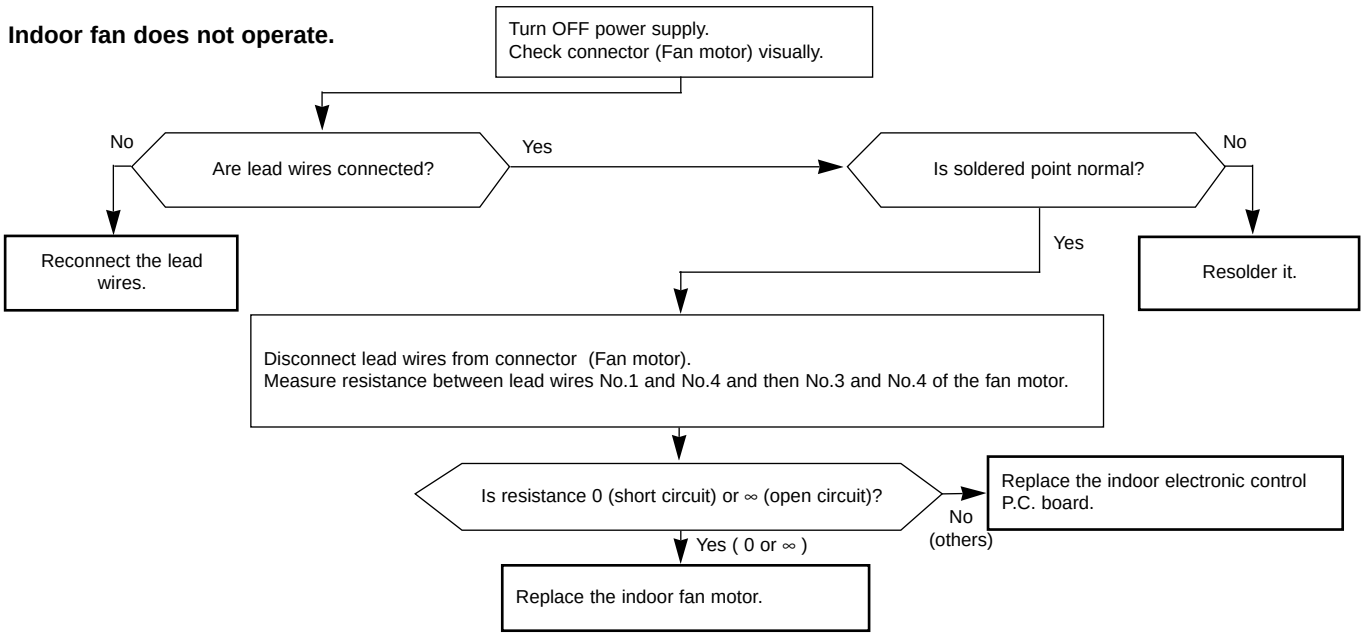
18NV
 

24NV
 
</td></tr>
<tr><td>Vane motor (MV)</td><td>Measure the resistance between the terminals with a tester.
(Part wiring temperature10°C ~ 30°C)
<table><tr><th></th><th>Normal</th><th>Abnormal</th></tr><tr><td>RED-PNK/ORN
BRN-YLW/BLU</td><td>329~357Ω</td><td>Opened or short-circuited</td></tr></table></td><td> 
</td></tr>
</table>

Ⓟ : Inner protector

Ⓐ Check of indoor fan motor

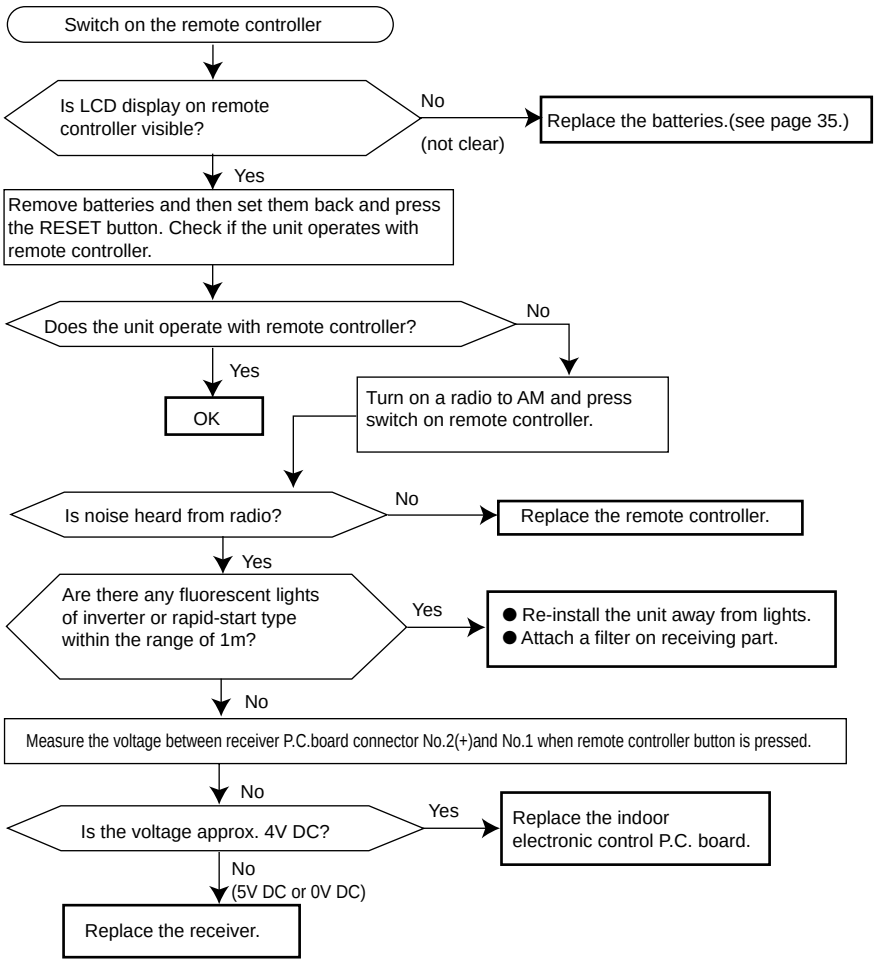
Indoor fan does not operate.


Turn OFF power supply.
Check connector (Fan motor) visually.
Are lead wires connected?
No
Yes
Is soldered point normal?
No
Yes
Reconnect the lead wires.
Resolder it.
Disconnect lead wires from connector (Fan motor).
Measure resistance between lead wires No.1 and No.4 and then No.3 and No.4 of the fan motor.
Is resistance 0 (short circuit) or ∞ (open circuit)?
No (others)
Replace the indoor electronic control P.C. board.
Yes (0 or ∞)
Replace the indoor fan motor.

Ⓑ Check of receiver P.C. board

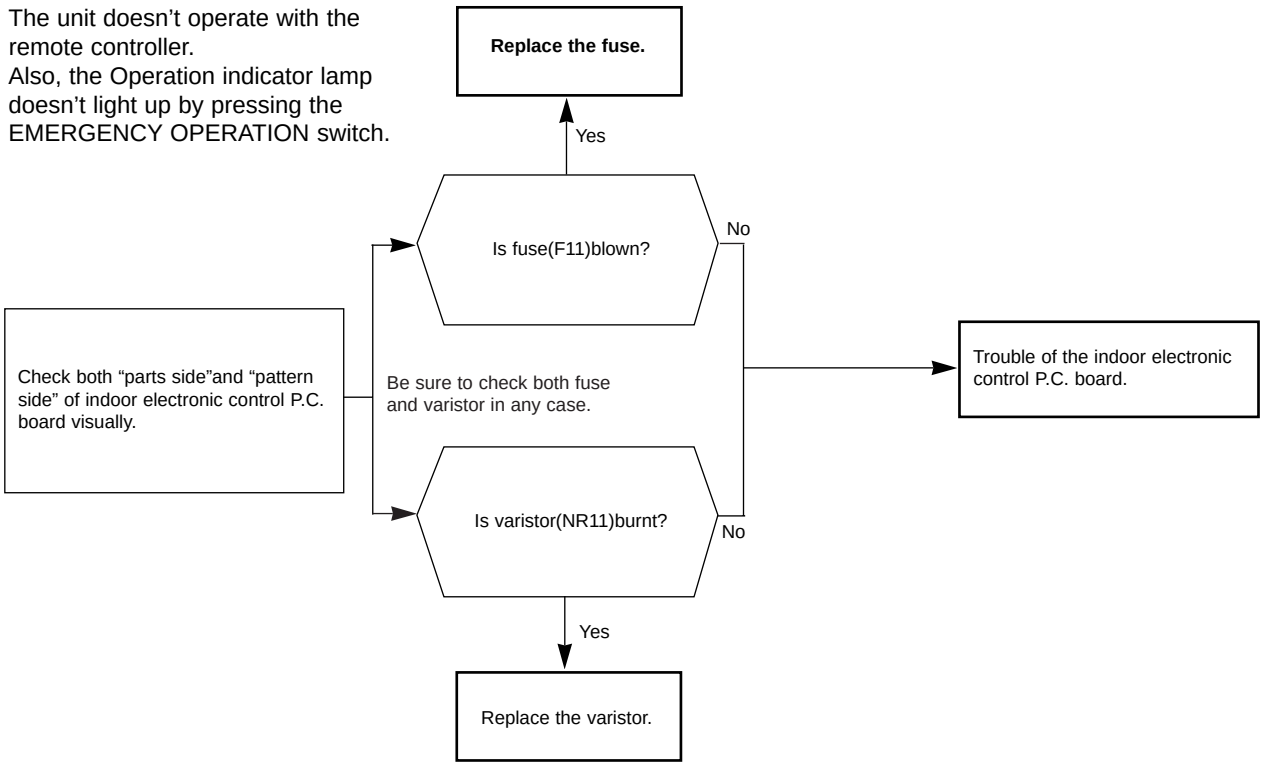
Indoor unit operates by pressing the EMERGENCY OPERATION switch, but does not operate with the remote controller.

※ Check if the remote controller is exclusive for this air conditioner.


Switch on the remote controller
Is LCD display on remote controller visible?
No
(not clear)
Replace the batteries.(see page 35.)
Yes
Remove batteries and then set them back and press the RESET button. Check if the unit operates with remote controller.
Does the unit operate with remote controller?
No
Yes
OK
Turn on a radio to AM and press switch on remote controller.
Is noise heard from radio?
No
Replace the remote controller.
Yes
Are there any fluorescent lights of inverter or rapid-start type within the range of 1m?
Yes
● Re-install the unit away from lights.
● Attach a filter on receiving part.
No
Measure the voltage between receiver P.C.board connector No.2(+)and No.1 when remote controller button is pressed.
No
Is the voltage approx. 4V DC?
Yes
Replace the indoor electronic control P.C. board.
No
(5V DC or 0V DC)
Replace the receiver.

ⓒCheck of indoor electronic control P.C. board

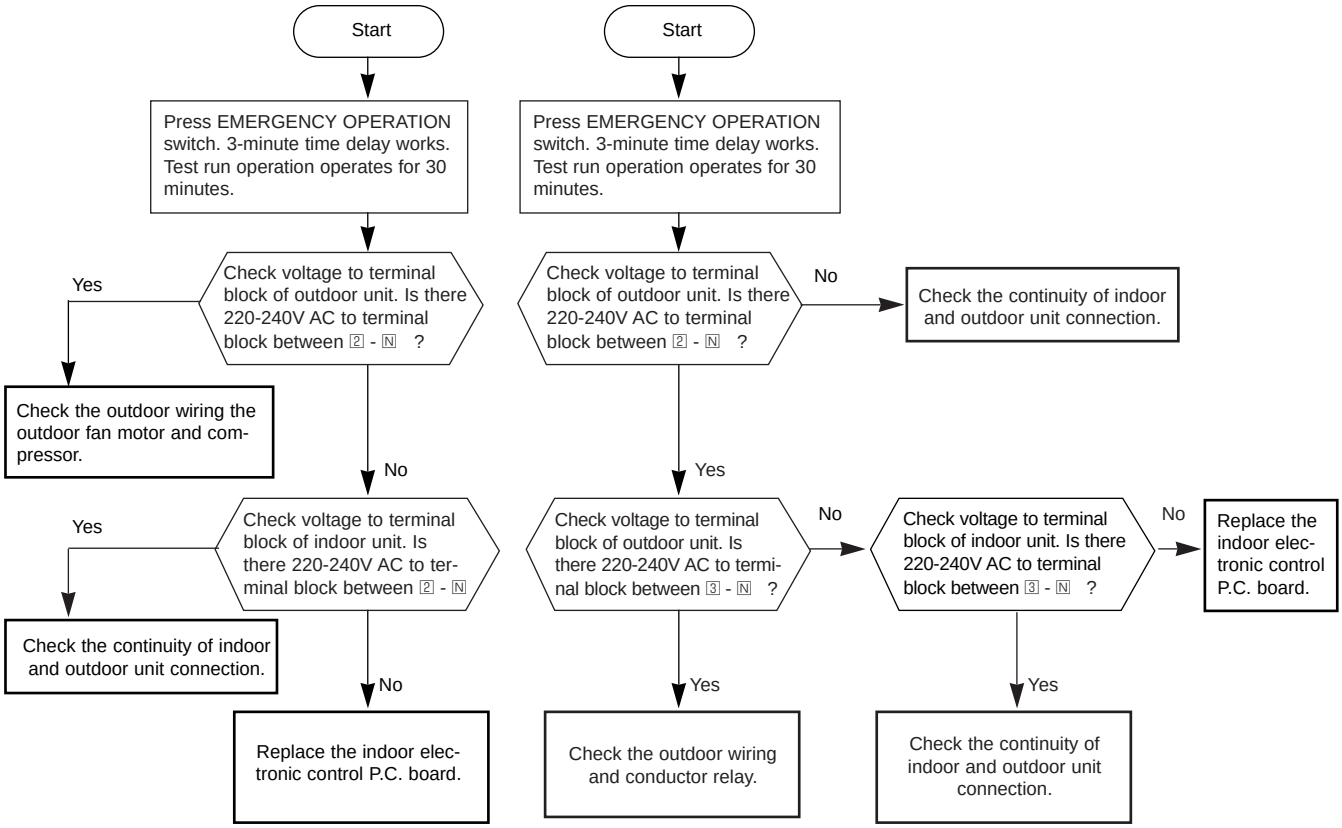
The unit doesn't operate with the remote controller.
Also, the Operation indicator lamp doesn't light up by pressing the EMERGENCY OPERATION switch.


Replace the fuse.
Yes
Is fuse(F11)blown?
No
Check both "parts side"and "pattern side" of indoor electronic control P.C. board visually.
Be sure to check both fuse and varistor in any case.
Trouble of the indoor electronic control P.C. board.
Is varistor(NR11)burnt?
No
Yes
Replace the varistor.

ⓓCheck of outdoor unit

Compressor and outdoor fan do not operate.(Only indoor fan operates.)

MCF-13NV-E4
MCF-18NV-E3


Start
Press EMERGENCY OPERATION switch. 3-minute time delay works. Test run operation operates for 30 minutes.
Check voltage to terminal block of outdoor unit. Is there 220-240V AC to terminal block between 2 - N ?
Yes
Check the outdoor wiring the outdoor fan motor and compressor.
No
Check voltage to terminal block of indoor unit. Is there 220-240V AC to terminal block between 2 - N
Yes
Check the continuity of indoor and outdoor unit connection.
No
Replace the indoor electronic control P.C. board.

MCF-24NV-E3

Start
Press EMERGENCY OPERATION switch. 3-minute time delay works. Test run operation operates for 30 minutes.
Check voltage to terminal block of outdoor unit. Is there 220-240V AC to terminal block between 2 - N ?
No
Check the continuity of indoor and outdoor unit connection.
Yes
Check voltage to terminal block of outdoor unit. Is there 220-240V AC to terminal block between 3 - N ?
No
Check voltage to terminal block of indoor unit. Is there 220-240V AC to terminal block between 3 - N ?
No
Replace the indoor electronic control P.C. board.
Yes
Check the outdoor wiring and conductor relay.
Yes
Check the continuity of indoor and outdoor unit connection.

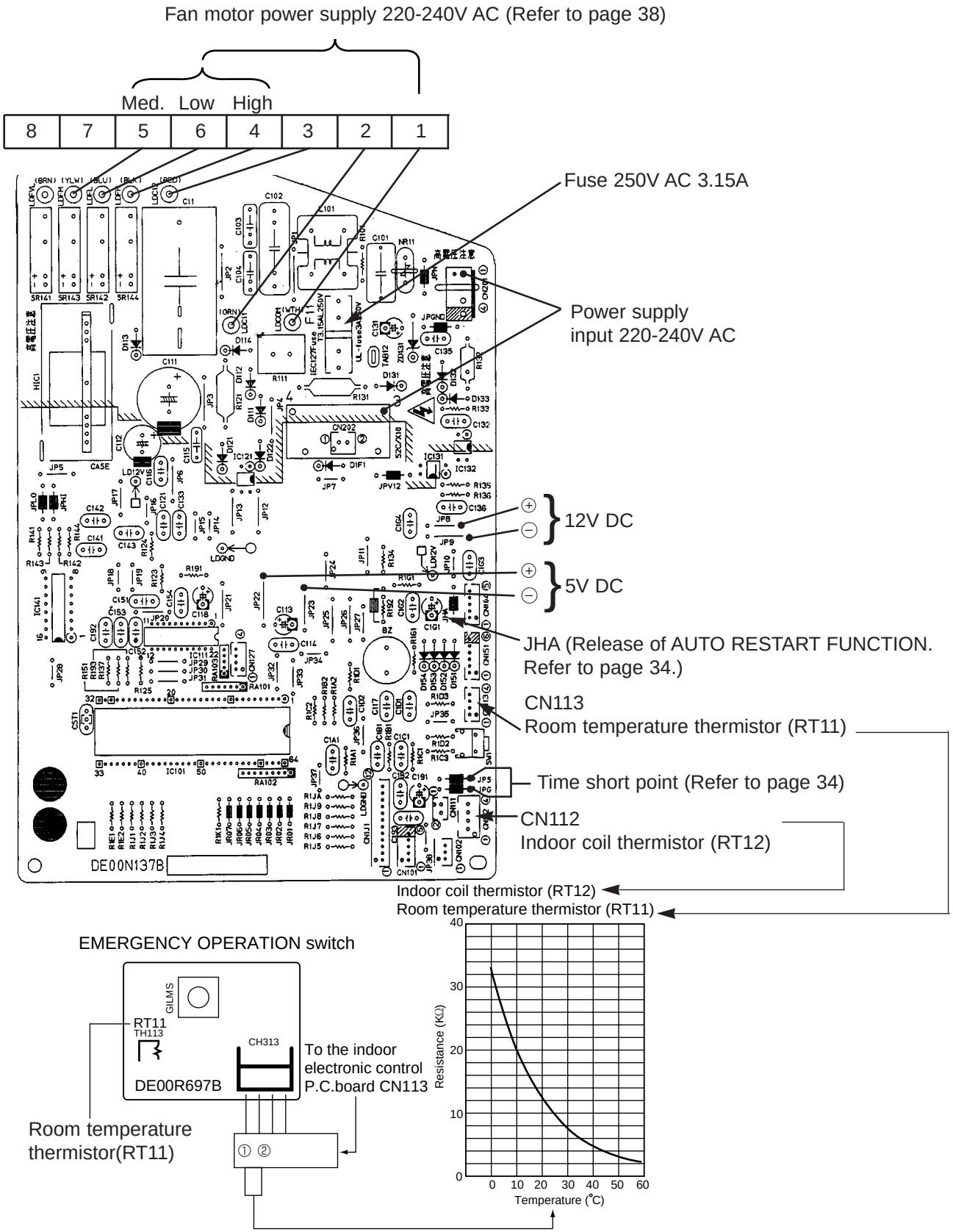
TEST POINT DIAGRAM AND VOLTAGE

MCF-13NV - E4

MCF-18NV - E3

MCF-24NV - E3

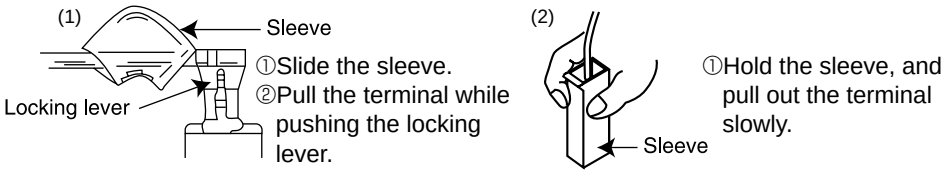
Indoor electronic control P.C. board



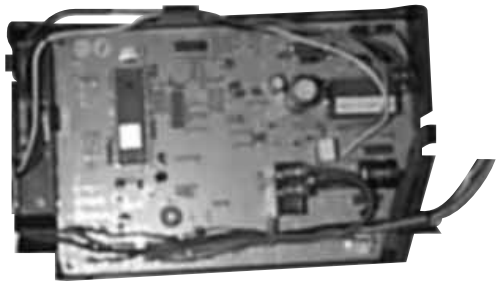
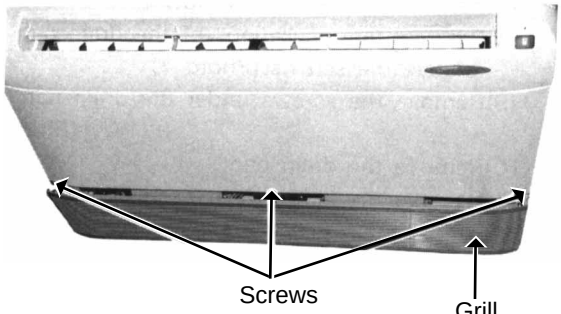
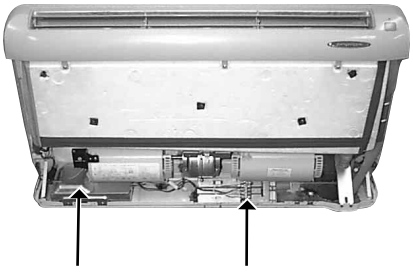
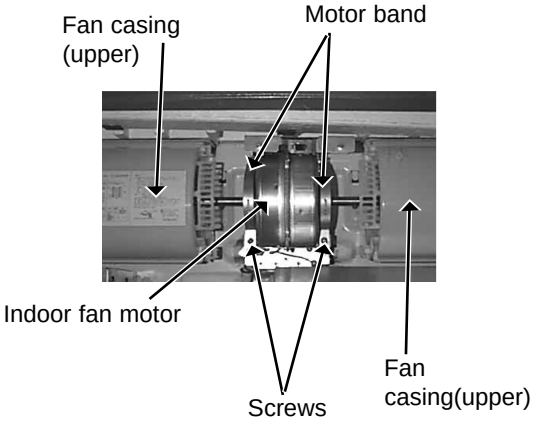
12 DISASSEMBLY INSTRUCTIONS

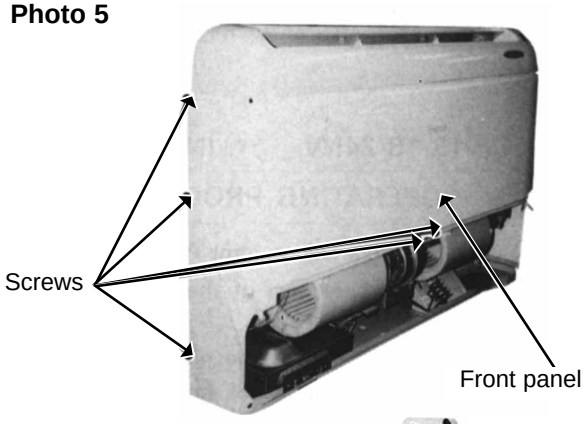
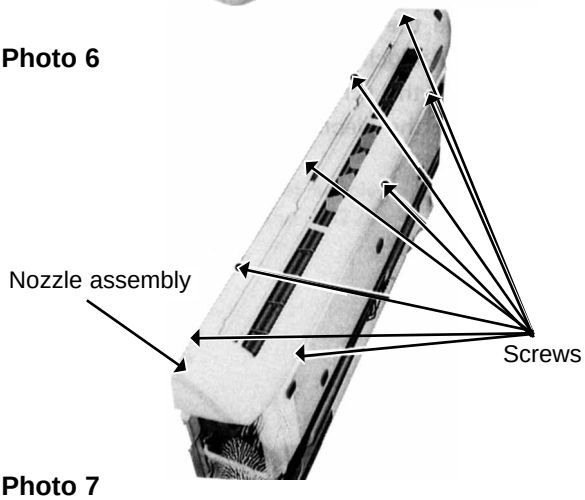
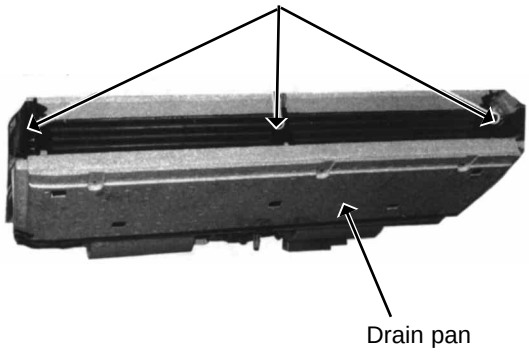
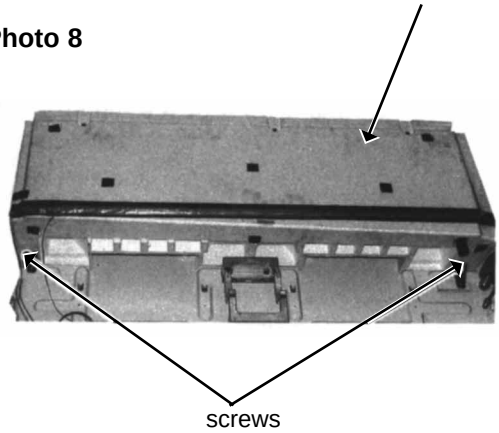
<"Terminal with lock mechanism" Detaching points>

In the case of terminal with lock mechanism, detach the terminal as shown below.

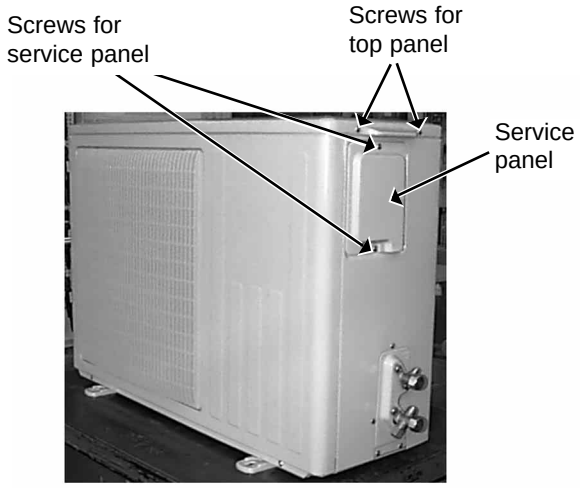
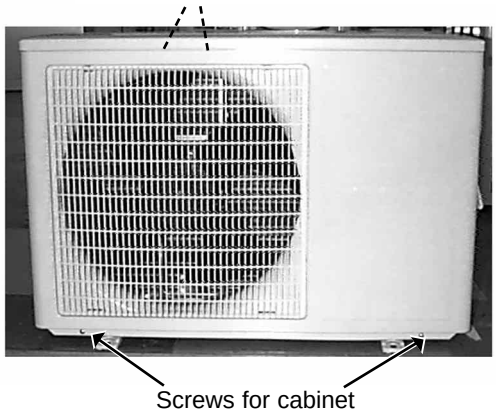
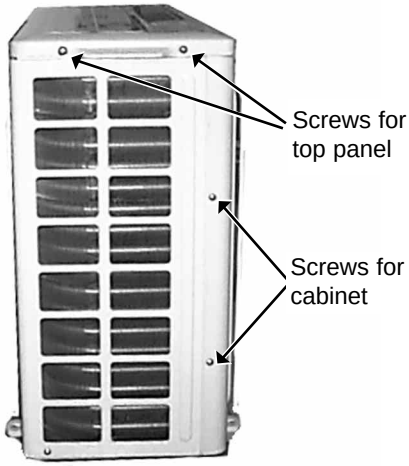
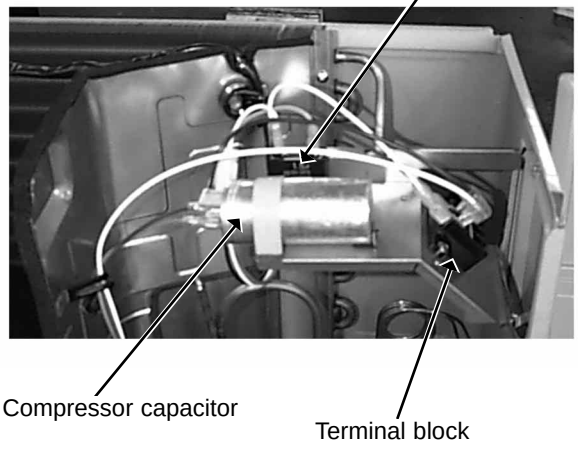


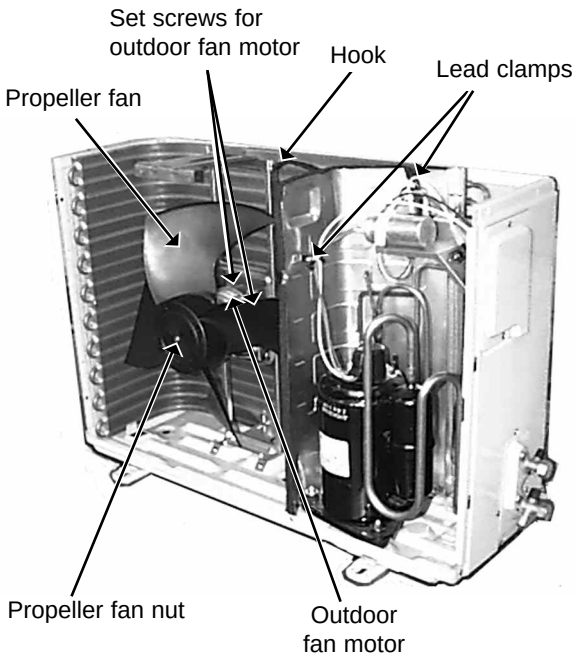
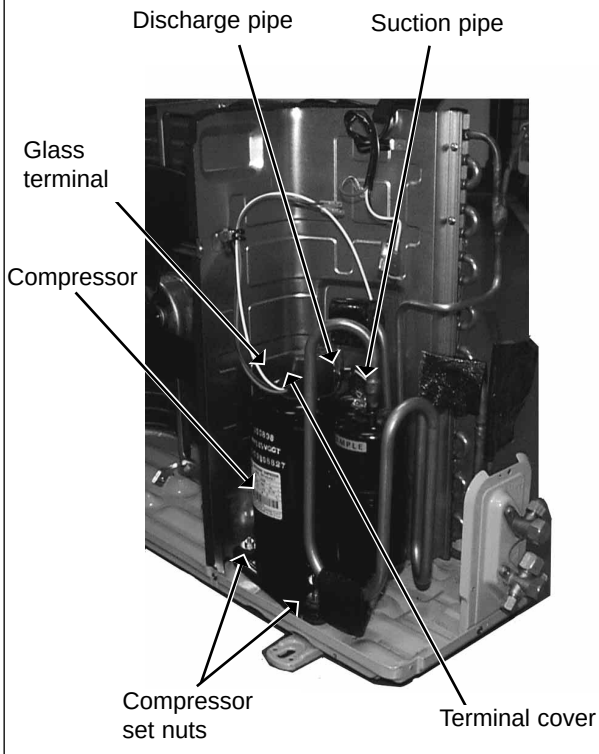
12-1. MCF-13NV-E4 MCF-18NV-E3 MCF-24NV-E3 INDOOR UNIT

OPERATING PROCEDURE	PHOTOS
1. Removing the electronic control P. C . board. (1) Pull out the upper part of the grill. (photo 1) (2) Remove the screws of the grill. (3) Remove screws of terminal block cover. (photo 2) Remove the terminal block cover and remove the terminal block. (4) Remove the screws of the electronic box cover. (5) Pull out the electronic control P . C . board. (photo 3) **Photo 3**  Electronic control P.C. board	**Photo 1**  **Photo 2** 
2. Removing the indoor fan motor (1) Remove the grill. (Refer to 1(1) (2)) (2) Remove the screws of the motor band. (3) Remove the fan casings.(upper) . (4) Disconnect the connector of the indoor fan motor. (5) Disconnect the ground wire of the fan motor. (6) Remove the screws of the motor band and remove the catch. (7) Take out the sirocco fan and the indoor fan motor .	**Photo 4** 

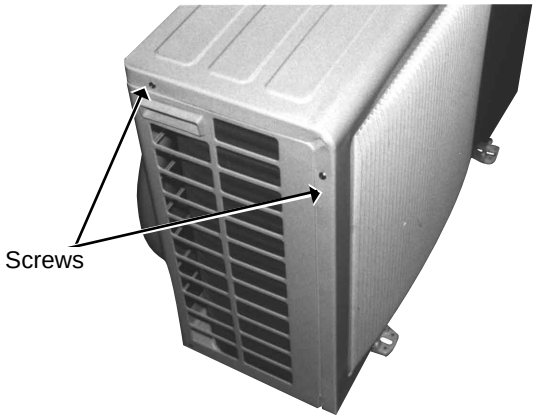
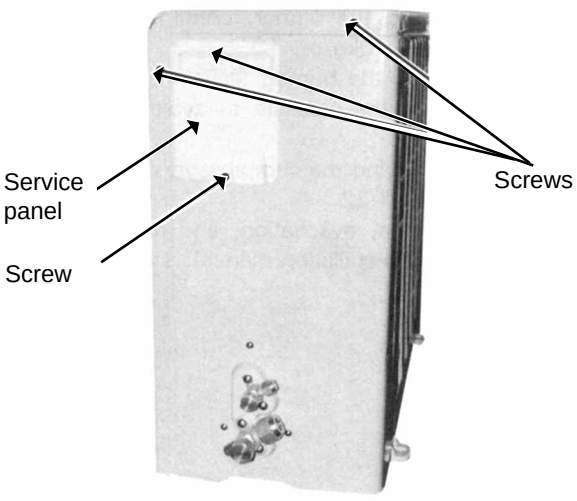
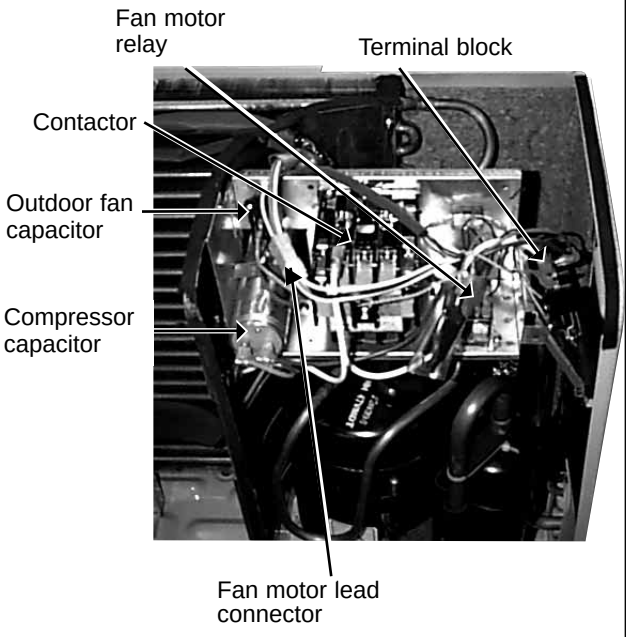
OPERATING PROCEDURE	PHOTOS
3. Removing the indoor heat exchanger. (1) Remove the grill. (Refer to 1(1) (2)) (2) Remove the screws on both sides and in front of the front panel. (Photo 5) (3) Remove the screws of the nozzle assembly. (Photo 6) (4) Remove the electronic box . (Refer to 1) (5) Remove the indoor fan motor . (Refer to 2) (6) Remove the screws of the motor support . (7) Remove the fan casing . (Iower) (8) Remove the insulations of the drain pan and remove the screws . (Photo 7) (9) Remove the screws under the drain pan .(Photo 8) (10) Remove the drain pan . (11) Remove the indoor heat exchanger.	**Photo 5**  **Photo 6**  **Photo 7**  **Photo 8** 

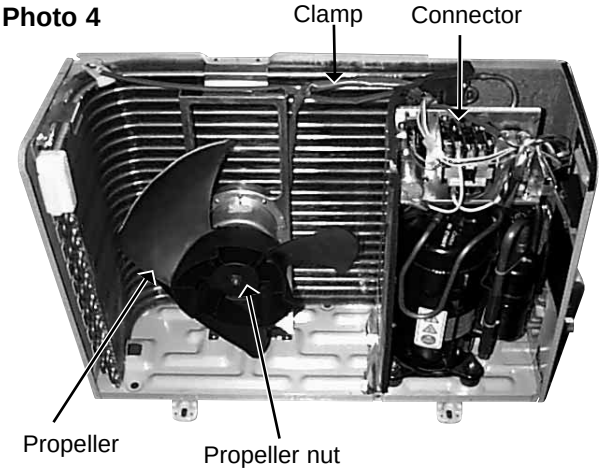
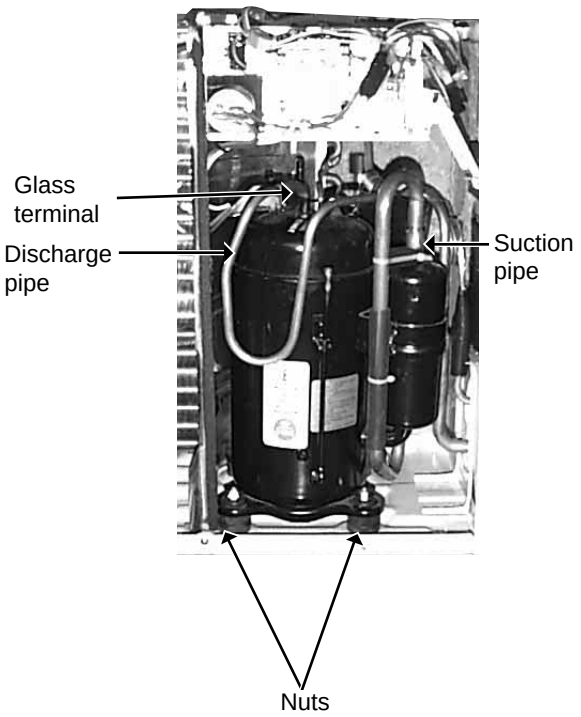
12-2. MUCF-13NV -E4
OUTDOOR UNIT

OPERATING PROCEDURE	PHOTOS
1. Removing the cabinet (1) Remove the screws securing the top panel. (2) Remove the screw securing the service panel. (3) Remove the screws securing the cabinet. (4) Remove the screws securing the front panel and motor support. (5) Remove the service panel, and remove the screw from the insides. (6) Remove the top panel. (7) Remove the cabinet. **Photo 3**  	**Photo 1**  **Photo 2** 
2. Removing the electrical parts (1) Remove the service panel and the cabinet.(Refer to 1) (2) Remove the following parts. •Compressor capacitor (C1) •Outdoor fan capacitor (C2) •Terminal block	**Photo 4** 

OPERATING PROCEDURE	PHOTOS
3. Removing the propeller fan and the outdoor fan motor (1) Remove the cabinet. (Refer to 1.) (2) Remove the propeller fan nut. (3) Remove the propeller fan. **NOTE : Loose the propeller fan in the rotating direction for removal.** When attaching the propeller fan, align the mark on the propeller fan and the motor shaft cut section. Set the propeller fan in position by using the cut on the shaft and the mark on the propeller fan. (4) Remove lead clamps and disconnect the outdoor fan motor lead wires. (5) Remove screws fixing the fan motor. (6) Remove the outdoor fan motor.	**Photo 5** 
4. Removing the compressor (1) Remove the cabinet. (Refer to 1) (2) Remove the relay panel. (3) Remove the soundproof felt. (4) Remove the terminal cover on the compressor. (5) Disconnect lead wires from the glass terminal of the compressor. (6) Release gas from the refrigerant circuit. (7) Disconnect the welded part of the discharge pipe. (8) Disconnect the welded part of the suction pipe. (9) Remove nuts fixing the compressor. (10) Remove the compressor. **NOTE:** ● Before using a burner, purge gas from the pipes until the pressure gauge shows 0 Mpa (0 kg/cm²). ● Use the burner under the condition that gas can be released even when the inner pressure rises by heat.	**Photo 6** 

12-3. MUCF-18NV-E3 MUCF-24NV-E3

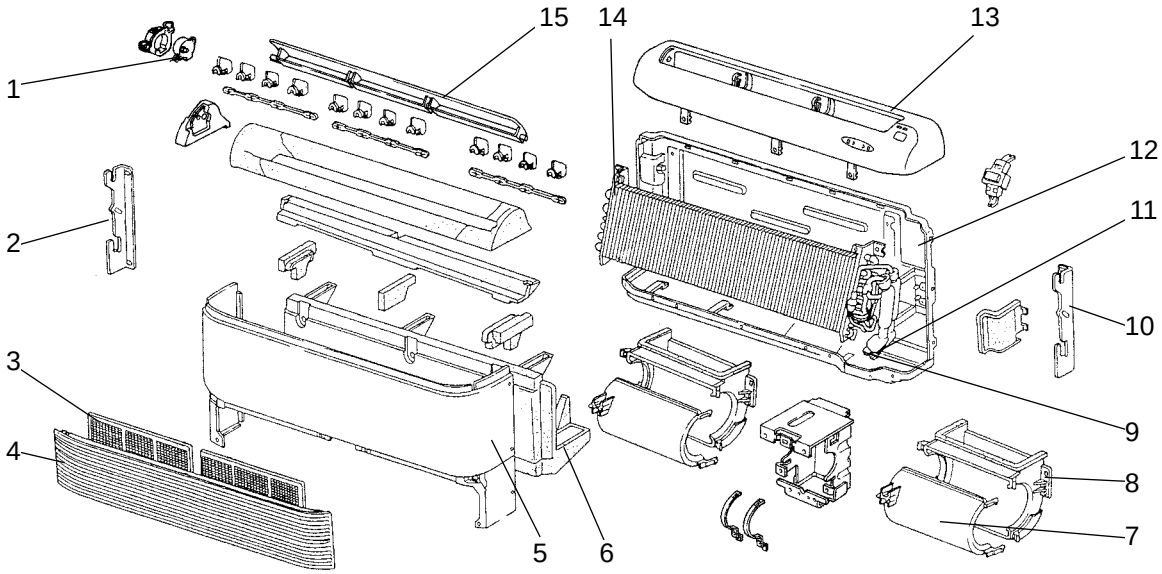
OPERATING PROCEDURE	PHOTOS
1. Removing the cabinet (1) Remove the screws securing the cabinet. (2) Remove the screw securing the service panel. (3) Remove the service panel, and remove the screw from the insides. (4) Remove the cabinet. **Photo 2**  	**Photo 1** 
2. Removing the electrical parts (1) Remove the cabinet . (Refer to 1) (2) Remove the following parts . •Compressor capacitor (C1) •Outdoor fan capacitor (C2) •Terminal block •Fan motor relay (X 1)(For MUCF - 24) •Contactor (52 C) (For MUCF - 24)	**Photo 3** 

OPERATING PROCEDURE	PHOTOS
3. Removing the outdoor fan motor (1) Remove the cabinet. (Refer to 1) (2) Disconnect the connector to remove the clamp of fan motor lead wire. (3) Remove the propeller nut and remove the propeller. (4) Remove screws securing the fan motor.	**Photo 4** 
4. Removing the compressor (1) Remove the cabinet. (Refer to 1) (2) Remove the soundproof felt. (3) Remove the terminal cover on the compressor. (4) Disconnect lead wires from the glass terminal of the compressor.(Refer to 2) (5) Release gas from the refrigerant circuit. (6) Disconnect the welded part of the discharge pipe. (7) Disconnect the welded part of the suction pipe. (8) Remove nuts securing the compressor. (9) Remove the compressor. **NOTE:** ● Before using a burner, purge gas from the pipes until the pressure gauge shows 0 Mpa (0 kg/㎠). ● Use the burner under the condition that gas can be released even when the inner pressure rises by heat.	**Photo 5** 

13 PARTS LIST

13-1. INDOOR UNIT
STRUCTURAL PARTS

MCF-13NV -E1(WH) MCF-13NV -E2(WH) MCF-13NV -E3(WH) MCF-13NV -E4(WH)
MCF-18NV -E1(WH) MCF-18NV -E2(WH) MCF-18NV -E3(WH)
MCF-24NV -E1(WH) MCF-24NV -E2(WH) MCF-24NV -E3(WH)

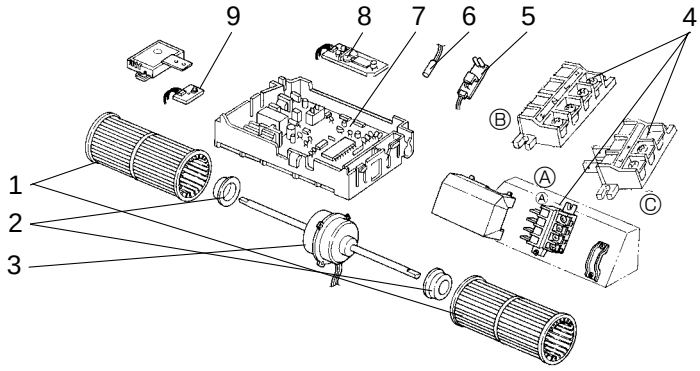


Part number that are circled is not shown in the illustration.

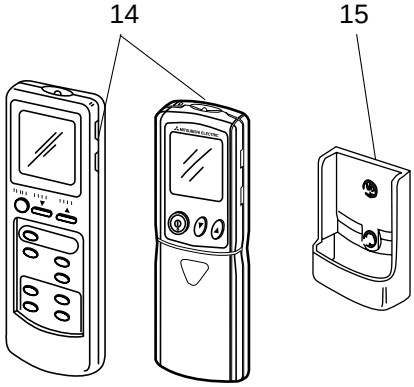
No.	Part No.	Part name	Symbol in Wiring Diagram	Q'ty/unit MCF- 13NV E1 WH	13NV E2 WH	13NV E3 WH	13NV E4 WH	18NV E1 WH	18NV E2 WH	18NV E3 WH	24NV E1 WH	24NV E2 WH	24NV E3 WH	Remark
1	E02 227 303	VANE MOTOR	VM	1	1	1	1	1	1	1	1	1	1	
2	E02 179 971	INSTALLATION METAL (L)		1	1	1	1	1	1	1	1	1	1	
3	E02 179 100	AIR FILTER		2	2	2	2	2	2	2	2	2	2	
4	E02 179 010	GRILLE		1	1	1	1	1	1	1	1	1	1	
5	E02 179 000	FRONT PANEL ASSEMBLY		1	1	1	1	1	1	1	1	1	1	
6	E02 215 700	DRAIN PAN		1	1	1	1	1	1	1	1	1	1	
7	E02 179 237	FAN CASING (U)		2	2	2	2	2	2	2	2	2	2	
8	E02 179 238	FAN CASING (L)		2	2	2	2	2	2	2	2	2	2	
9	E02 179 667	UNION (GAS)		1	1	1	1							ϕ12.7
	E02 138 666	UNION (GAS)						1	1	1	1	1	1	ϕ15.88
10	E02 179 972	INSTALLATION METAL (R)		1	1	1	1	1	1	1	1	1	1	
11	E02 176 667	UNION (LIQUID)									1	1	1	ϕ9.52
	E02 138 667	UNION (LIQUID)		1	1	1	1	1	1	1				ϕ6.35
12	E02 179 231	BACK PANEL		1	1	1	1	1	1	1	1	1	1	
13	E02 227 235	NOZZLE		1	1	1	1	1	1	1	1	1	1	
14	E02 179 620	INDOOR HERT EXCHANGER		1	1	1	1	1	1	1	1	1	1	
15	E02 227 040	VANE		1	1	1	1	1	1	1	1	1	1	
(16)	E02 179 142	GRILLE CATCH		3	3	3	3	3	3	3	3	3	3	3PCS/SET

MCF-13NV -E1(WH) MCF-13NV -E2(WH) MCF-13NV -E3(WH) MCF-13NV -E4(WH)
MCF-18NV -E1(WH) MCF-18NV -E2(WH) MCF-18NV -E3(WH)
MCF-24NV -E1(WH) MCF-24NV -E2(WH) MCF-24NV -E3(WH)

13-2. INDOOR UNIT ELECTRICAL PARTS



13-3. ACCESSORY AND REMOTE CONTROLLER PARTS



13-2. INDOOR UNIT ELECTRICAL PARTS

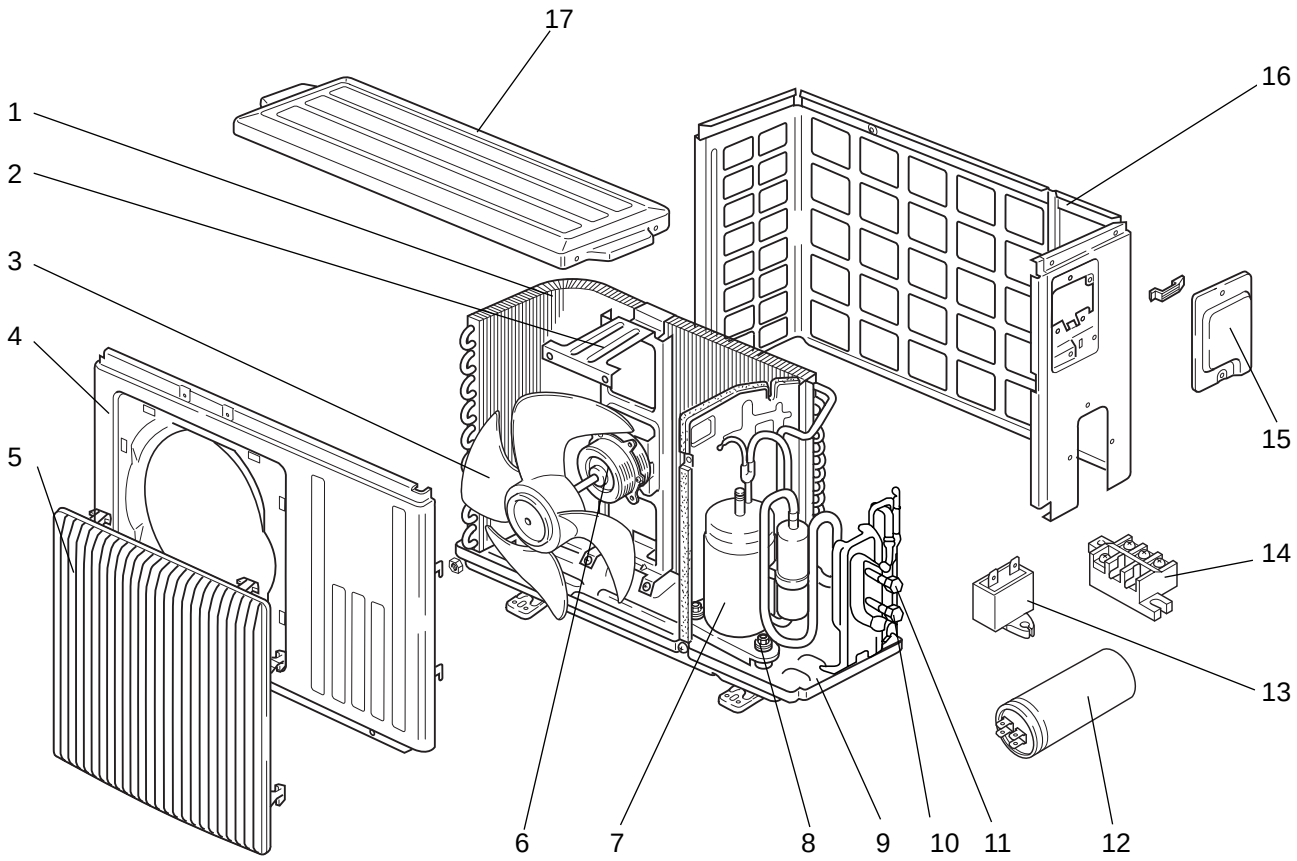
Part numbers that are circled is not shown in the illustration.

No.	Part No.	Part name	Symbol in Wiring Diagram	Q'ty/unit MCF- 13NV E1 WH	13NV E2 WH	13NV E3 WH	13NV E4 WH	18NV E1 WH	18NV E2 WH	18NV E3 WH	24NV E1 WH	24NV E2 WH	24NV E3 WH	Remark
1	E02 179 500	SIROCCO FAN		2	2	2	2	2	2	2	2	2	2	
2	E02 179 505	FAN MOTOR RUBBER MOUNT		2	2	2	2	2	2	2	2	2	2	2PCS/SET
3	E02 227 300	INDOOR FAN MOTOR	MF	1	1	1	1							RB4V19-□□
	E02 228 300	INDOOR FAN MOTOR	MF					1	1	1				RB4V25-□□
	E02 229 300	INDOOR FAN MOTOR	MF								1	1	1	RB4V36-□□
4	E02 573 375	TERMINAL BED	TB	1	1	1	1	1	1	1	1	1	1	FigureA
	E02 574 375	TERMINAL BED	TB	1	1	1	1	1	1	1				FigureB
	E02 575 375	TERMINAL BED	TB								1	1	1	FigureC
5	E02 227 468	RECEIVER P.C. BOARD		1	1	1	1	1	1	1	1	1	1	
6	E02 140 307	INDOOR-COIL THERMISTOR	RT12	1				1			1			
	E02 324 307	INDOOR-COIL THERMISTOR	RT12		1	1	1		1	1		1	1	
7	E02 227 450	ELECTRONIC CONTROL P.C. BOARD		1										
	E02 228 450	ELECTRONIC CONTROL P.C. BOARD						1						
	E02 220 450	ELECTRONIC CONTROL P.C. BOARD									1			
	E02 324 450	ELECTRONIC CONTROL P.C. BOARD			1	1	1							
	E02 325 450	ELECTRONIC CONTROL P.C. BOARD							1	1				
	E02 326 450	ELECTRONIC CONTROL P.C. BOARD										1	1	
8	E02 324 452	AUTO RESTART ASSEMBLY			1	1	1		1	1		1	1	
9	E02 215 328	SWITCH BOARD		1	1	1	1	1	1	1	1	1	1	
⑩	E02 127 382	FUSE	F11	1	1	1	1	1	1	1	1	1	1	3.15A
⑪	E02 138 340	COMPRESSOR CONTACTOR	52C	1				1			1			
⑫	E02 252 350	INDOOR FAN CAPACITOR	C11					1			1			2.0 μF/440VAC
	E02 139 350	INDOOR FAN CAPACITOR	C11	1										1.8μF/440VAC
⑬	E02 085 385	VARISTOR	NR11	1	1	1		1	1		1	1		
	E02 336 385	VARISTOR	NR11				1			1			1	

13-3. ACCESSORY AND REMOTE CONTROLLER PARTS

14	E02 227 426	REMOTE CONTROLLER		1	1	1		1	1		1	1		
	E02 573 426	REMOTE CONTROLLER					1			1			1	
15	E02 141 083	REMOTE CONTROLLER HOLDER		1	1	1		1	1	1	1	1		
	E02 527 083	REMOTE CONTROLLER HOLDER					1						1	

13-3. OUTDOOR UNIT
STRUCTURAL PARTS AND FUNCTIONAL PARTS
MUCF-13NV -E3 MUCF-13NV -E4

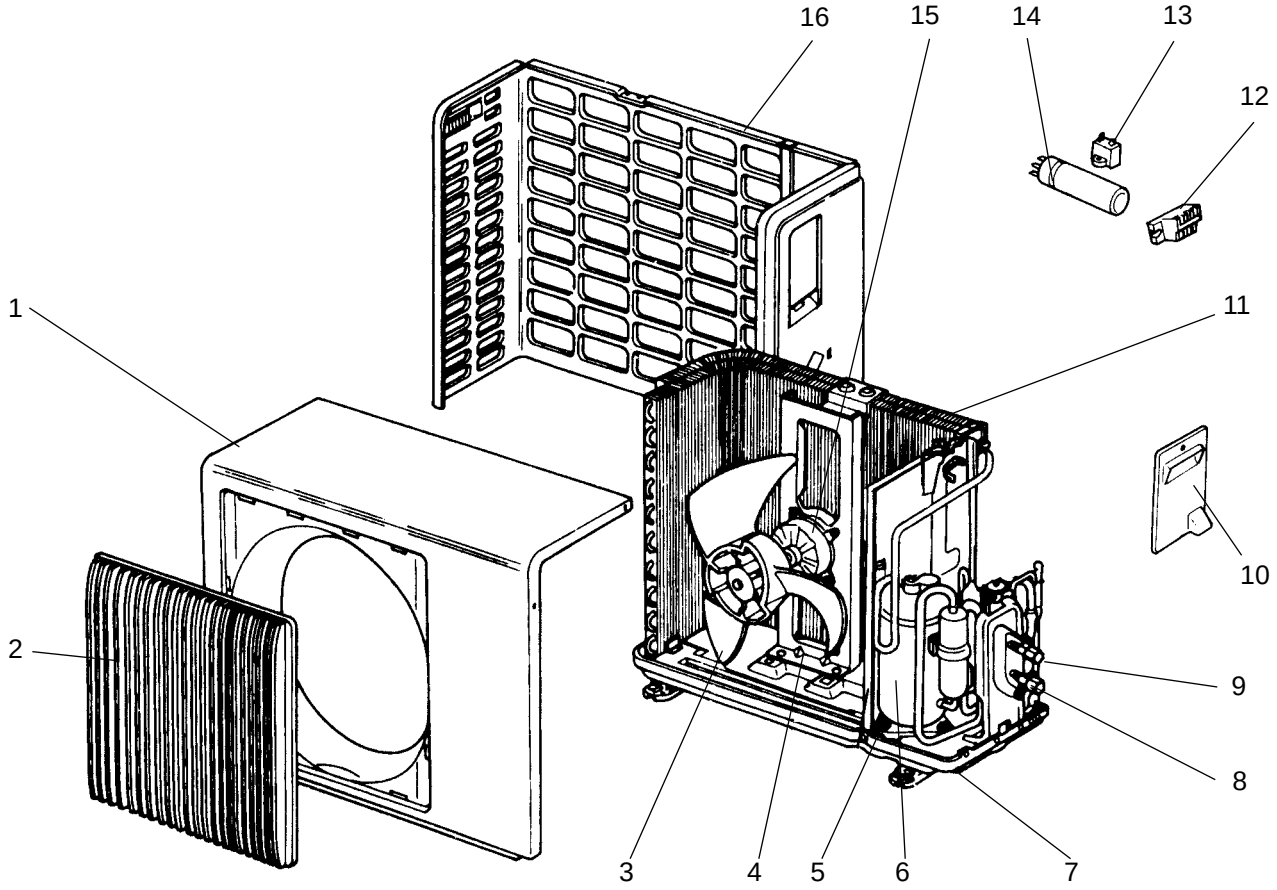


Part numbers that are circled is not shown in the illustration.

No.	Part No.	Part name	Symbol in Wiring Diagram	Q'ty/unit		Remarks	Price
				MUCF-13NV-E3	MUCF-13NV-E4		
1	E02 336 630	OUTDOOR HEAT EXCHANGER		1	1		
2	E02 336 515	MOTOR SUPPORT		1	1		
3	E02 336 501	PROPELLER FAN		1	1		
4	E02 336 232	CABINET		1	1		
5	E02 336 521	GRILLE(OUT)		1	1		
6	E02 438 301	OUTDOOR FAN MOTOR	MF	1	1	RA6V33-□□	
7	E02 141 900	COMPRESSOR	MC	1	1	RH-231VHAT	
8	E02 075 506	COMPRESSOR RUBBER SET		3	3	3PCS/SET	
9	E02 340 290	BASE		1	1		
10	E02 340 661	STOP VALVE (GAS)		1	1	ϕ12.7	
11	E02 339 662	STOP VALVE (LIQUID)		1	1	ϕ6.35	
12	E02 079 353	COMPRESSOR CAPACITOR	C1	1	1	30μF /440V AC	
13	E02 095 350	OUTDOOR FAN CAPACITOR	C2	1	1	1.5μF /440V AC	
14	E02 197 374	TERMINAL BLOCK	TB	1	1	3P	
15	E02 336 245	SERVICE PANEL		1	1		
16	E02 339 233	BACK PANEL		1	1		
17	E02 336 297	TOP PANEL		1	1		
(18)	E02 414 936	CAPILLARY TUBE		1	1	ϕ3.0Xϕ1.6X300	
(19)	E02 095 382	FUSE	F	1	1	250V 2A	

13-4. OUTDOOR UNIT
STRUCTURAL PARTS

MUCF-13NV -E1 MUCF-13NV -E2
MUCF-18NV -E1 MUCF-18NV -E2 MUCF-18NV -E3
MUCF-24NV -E1 MUCF-24NV -E2 MUCF-24NV -E3



13-4. OUTDOOR UNIT STRUCTURAL PARTS

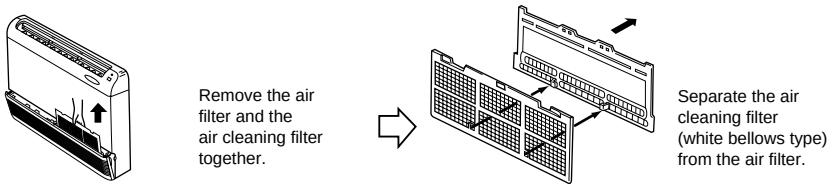
Part numbers that are circled is not shown in the illustration.

No.	Part No.	Part name	Symbol in Wiring Diagram	Q'ty/unit MUCF-								Remark
				13NV-E1	13NV-E2	18NV-E1	18NV-E2	18NV-E3	24NV-E1	24NV-E2	24NV-E3	
1	E02 141 232	CABINET		1	1	1	1	1	1	1	1	
2	E02 141 521	GRILLE(OUT)		1	1	1	1	1	1	1	1	
3	E02 141 501	PROPELLER FAN		1	1	1	1	1	1	1	1	
4	E02 138 515	MOTOR SUPPORT				1	1	1				
	E02 140 515	MOTOR SUPPORT		1	1							
	E02 139 515	MOTOR SUPPORT							1	1	1	
5	E02 075 506	COMPRESSOR RUBBER SET		3	3							3RUBBER
	E02 138 506	COMPRESSOR RUBBER SET				4	4	4	4	4	4	4RUBBER
6	E02 141 900	COMPRESSOR	MC	1	1							RH-231VHAT
	E02 138 900	COMPRESSOR	MC			1	1	1				NH-33VMDT
	E02 042 900	COMPRESSOR	MC						1	1	1	NH-47VMDT
7	E02 140 290	BASE		1	1							
	E02 138 290	BASE				1	1	1				
	E02 176 290	BASE							1	1	1	
8	E02 140 661	STOP VALVE(GAS)		1	1							ϕ12.7
	E02 150 661	STOP VALVE(GAS)				1	1	1	1	1	1	ϕ15.88
9	E02 139 662	STOP VALVE(LIQUID)		1	1	1	1	1				ϕ6.35
	E02 176 662	STOP VALVE(LIQUID)							1	1	1	ϕ9.52
10	E02 141 245	SERVICE PANEL		1	1	1	1	1	1	1	1	
11	E02 141 630	OUTDOOR HEAT EXCHANGER		1	1							
	E02 138 630	OUTDOOR HEAT EXCHANGER				1	1	1				
	E02 147 630	OUTDOOR HEAT EXCHANGER							1	1	1	
12	E02 197 374	TERMINAL BLOCK	TB	1	1	1	1	1				
	E02 209 374	TERMINAL BLOCK	TB						1	1	1	
13	E02 138 351	FAN MOTOR CAPACITOR	C2	1	1	1	1	1	1	1	1	3.0μF/440VAC
14	E02 079 353	COMP RUN CAPACITOR	C1	1	1							30μF/440VAC
	E02 144 353	COMP RUN CAPACITOR	C1			1	1	1				45μF/440VAC
	E02 082 353	COMP RUN CAPACITOR	C1						1	1	1	50μF/440VAC
15	E02 141 301	OUTDOOR FAN MOTOR	MF	1	1							
	E02 144 301	OUTDOOR FAN MOTOR	MF			1	1	1				
	E02 147 301	OUTDOOR FAN MOTOR	MF						1	1	1	
16	E02 140 233	BACK PANEL		1	1	1	1	1	1	1	1	
(17)	E02 140 936	CAPILLARY TUBE		1	1							ϕ3.0Xϕ1.8X800
	E02 138 936	CAPILLARY TUBE				1	1	1	1	1	1	ϕ3.0Xϕ2.0X700
	E02 176 936	CAPILLARY TUBE							1	1	1	ϕ3.0Xϕ1.6X350
(18)	E02 010 342	COMP CONTACTOR	52C						1	1	1	
(19)	E02 229 381	THERMAL REED SWITCH	26F1						1	1	1	
(20)	E02 095 382	FUSE	F	1	1	1	1	1	1	1	1	2A
(21)	E02 288 343	FAN MOTOR RELAY	X1						1	1	1	
(22)	E02 326 384	SURGE ABSORBER	CR						1	1	1	
(23)	E02 069 644	DIS. PRESSURE REGULATOR							1	1	1	

14 OPTIONAL PARTS

14-1. AIR CLEANING FILTER

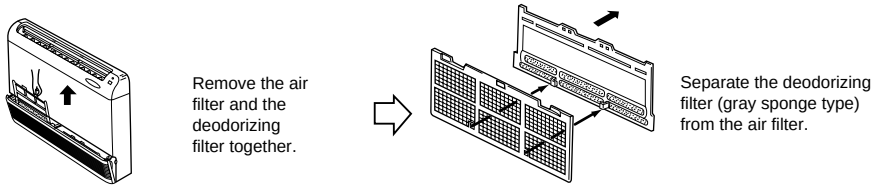
- If the air cleaning filter is clogged, it may lower the unit's capacity or cause condensation at the air outlet .
- The air cleaning filter is disposable . The standard usable term is about 4 months . However , if the color of the filter turns to dark brown , replace soon .


Remove the air filter and the air cleaning filter together.
Separate the air cleaning filter (white bellows type) from the air filter.

Models	Part No.
MCF-13NV- E4 **MCF-18NV-** E3 **MCF-24NV-** E3	MAC - 1200 FT

14-2. DEODORIZING FILTER

- Clean the filter every two weeks . When it becomes too dirt , clean it more often .
- Replace the filter with a new one when its color can not be restored even after washing or when the filter becomes dark.
- Standard interval for the filter replacement is about 1 year .


Remove the air filter and the deodorizing filter together.
Separate the deodorizing filter (gray sponge type) from the air filter.

Models	Part No.
MCF-13NV- E4 **MCF-18NV-** E3 **MCF-24NV-** E3	MAC - 1700 DF

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